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LBERTA DEPARTMENT OF AGRICULTUR

annual report 1971

EDMONTON, ALBERTA
Printed by L. S. WALL, Printer to the Queen's Most Excellent Majesty
1972

To The HONOURABLE,
J. W. GRANT MacEWAN,
Lieutenant-Governor of the
Province of Alberta

Sir:

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1971.

I have the honour to be, Sir,

Your obedient servant,
HUGH M. HORNER
Minister of Agriculture

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REPORT OF THE DEPARTMENT OF AGRICULTURE 1971

The Honorable Hugh M. Horner
Minister of Agriculture

I have the honor to submit the annual report of the Department of Agriculture for the calendar year of 1971.

Recognition of the importance of the agricultural industry to the general prosperity of the province stimulated new developmental policies in nineteen hundred and seventy-one. It was recognized that the Department of Agriculture, which serves an industry accounting for 40 to 50% of the gross provincial product, generated within the province must have objectives which would:

1. Expand domestic and foreign markets for the sale of Alberta's agricultural products.
2. Improve farm income, increase the opportunities for family farm development, and revitalize rural communities.
3. Expand the opportunities for optimum agricultural production to meet world needs.

To obtain these objectives reorganization of the department was implemented to facilitate policy formulation for improved liaison between governments on a provincial, national and international basis and increase communication with commodity groups and other sectors of the industry.

Existing divisions within the department were reorganized into three general areas to cover:

1. MARKETING
2. FARM AND RURAL RESOURCE DEVELOPMENT
3. PRODUCTION

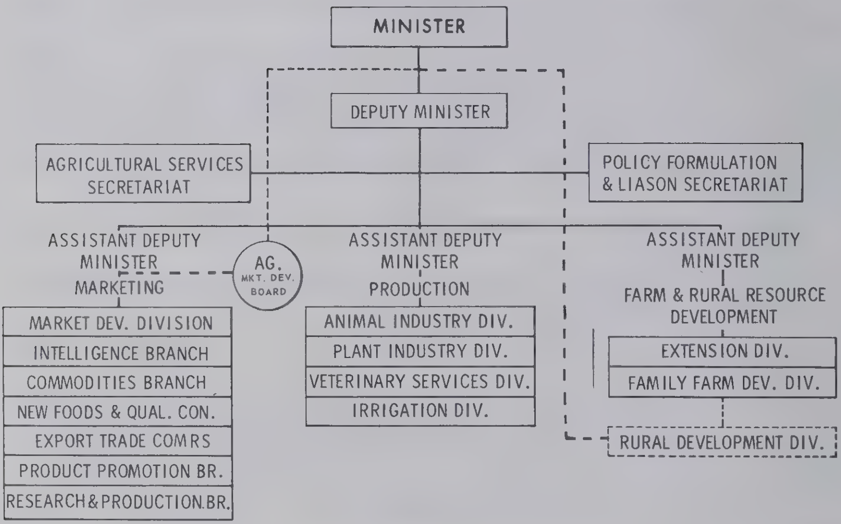
A Policy Formulation and Liaison Secretariat was formed to assist in identifying priorities, develop policy and monitor the activities of the department. Three new divisions were formed, the Family Farm Development Division, the Marketing and Economics Division and the Irrigation Division. The Farm Economics and Program Development Divisions were disbanded.

Branches existing in other departments which were incorporated into the Department of Agriculture included:

> The Irrigation Division from the Department of the Environment; the Co-operative Activities and Credit Union Branch from the Department of Industry and Tourism; Right of Entry Arbitration Board from the Department of Mines and Minerals.

The Agricultural and Vocational Colleges formerly administered by the Department of Agriculture were transferred to the Department of Advanced Education. The administration of the Agricultural Chemicals Act was transferred to the Department of the Environment.

NEW STRUCTURE



New emphasis was placed on the marketing of Alberta's agricultural products at all levels with the department taking an active role in the removal of restrictions on the interprovincial movement of eggs, broilers and turkeys. The Alberta Milk Market-Sharing Plan was proposed. The plan was designed to be part of the federal market sharing program which was conceived by the Dairy Farmers of Canada in response to the federal government's request that surplus milk production be controlled.

Steps were taken to appraise domestic and foreign markets so adjustments could be made in the areas of production, quality, supply and marketing techniques of the province's agricultural commodities to accommodate potential customers.

In general the industry experienced a normal crop year with a good harvest period. There was a substantial increase in rapeseed acreage. Animal production continued to be the most certain and main source of income to Alberta farmers. Good cattle prices and high interest in the importation of European breeds were noted while the swine industry experienced drastically reduced prices. Pressure from interprovincial competition at the first of the year and over-production characterized the poultry industry while the dairy industry was strengthened by the reduction in world surpluses.

Major administrative changes included the appointment of myself as Deputy Minister of the department on June 1, 1971, succeeding Dr. E. E. Ballantyne who became Deputy Minister of the Department of the Environment. Executive Secretary, R. H. McMillan, retired during the year and Robert F. Beeson assumed the position of Director of Administration. The valuable contributions to the agricultural industry made by Dr. Ballantyne as Director of Veterinary Services and Deputy Minister and R. H. McMillan in the capacity of Poultry Commissioner and Executive Secretary are hereby acknowledge.

It is my pleasure to express on behalf of all members of the department staff, a sincere appreciation to those individuals and organizations that have assisted in the formulation and implementation of agricultural policies for the benefit of those living within our province.

Respectfully submitted,

Dr. G. R. Purnell, B.Sc., M.Sc., Ph.D.
Deputy Minister

PERSONNEL OFFICE

C. Davidson, Personnel Director

It is the particular responsibility of the Department Personnel Office to assist line management in the development and administration of an integrated and comprehensive personnel management program.

Six training sessions for Regional Staff were presented by personnel office staff. Topics covered were Personnel Regulations, Policy, Communications, Supervision and Classification.

The Assistant Personnel Officer was promoted to Personnel Director for the Department of Environment. A replacement was acquired from the staff of the Central Personnel Office.

The University Recruiting Program resulted in the hiring of five 1971 Agricultural graduates and five Home Economics graduates.

The Department Personnel Office researched and presented a brief to the Deputy Minister with regard to allowances involved in moving employees. There is considerable evidence to show that employees are retaining losses that are non-recoverable. This has been a barrier to employees accepting promotions.

An agreement was signed by the Deputy Minister and the Public Service Commissioner with regard to the decentralization of the classification, selection, and training functions; however to date this has not become fully operational.

The Department's structure changed in terms of personnel with the transfer from the Department of the three Agricultural Colleges to Advanced Education and the Water Resources Division to the Department of the Environment. Conversely, into the Department were the Cooperative Activities and Credit Union Branch from the Department of Industry and Tourism and the Right of Entry Arbitration Board from the Department of Mines and Minerals.

The Chief Personnel Officer has been appointed to a Committee studying the present system of performance evaluation in the Civil Service, and also to a Committee to study a code of conduct and ethics.

There was one claim on the Employee Group Insurance Plan in the amount of $20,000.00 early in 1971.

As of December, 1971, there were 773 positions in the Department of which 731 were occupied.

Disposition of staff and personnel transactions are shown below in tabular form.

BREAKDOWN OF OCCUPIED POSITIONS DECEMBER 1971

Divisions	Clerical	Prof.	Tech.	Other	Total	%
General Administration	28	10	0	4	42	5.7
Program Development	7	9	3	0	19	2.6
Farm Economics	28	26	5	10	69	9.5
Veterinary Services	17	31	18	1	67	9.2
Plant Industry	20	41	27	13	101	13.8
Animal Industry	44	41	6	56	147	20.1
Extension	80	140	5	0	225	30.8
Cooperative Activities	34	14	0	0	48	6.5
Right of Entry Arbitration Board	8	3	0	2	13	1.8
DEPARTMENT TOTAL	266	315	64	86	731	100%
(%)	(36%)	(43%)	(9%)	(12%)	(100%	

NOTE: Others include brand inspectors, caretakers, fieldmen,gardeners, groundsmen, automotive equipment operators, etc.

TOTAL TRANSACTIONS 1971

Description	Total
Competitions Held	125
Reclassifications—no change	81
changed	53
Classification Appeals—upheld	0
rejected	2
Commencements	140
Terminations	94
Transfer	38

NOTE: Difference between number of competitions and number of commencements is attributable to a number of factors: i.e. No one selected or more than one person hired from same competition.

ANIMAL INDUSTRY DIVISION

ANIMAL INDUSTRY DIVISION

W. H. T. Mead, B.Sc., P.Ag., Director

Difficulties in grain marketing continued to exert pressures on animal production as the most certain and main source of income to farmers.

The cattle industry was particularly active with accelerating price levels and continued high interest in the importation and promotion of the newer European breeds.

A government guaranteed loan program for the purchase of female cattle and sheep came into effect in April, applicable to the Peace River area, and was later extended to the area generally to the north, northeast and west of Edmonton, and west of the 5th Meridian to Red Deer County for cattle, and to the whole province for sheep.

The swine industry experienced difficult times due to drastically reduced prices brought about by spectacular production increases in the total Canadian output.

While sheep numbers continued to increase, prices were generally disappointing in relation to the previous year. The sheep industry showed its greatest improvement to date in evidence of modernizing production methods to meet the competition for the meat dollar.

The Dairy industry was strengthened immeasurably by the reduction in world surpluses and confidence in the industry was greatly improved.

The Poultry industry was characterized by pressures of over-production and interprovincial competition. Interprovincial embargoes created much tension which was reduced toward the end of the year by negotiation and dialogue between Board agencies of the various provinces.

Educational leave for post-graduate studies was extended to Mr. Reddon of the Livestock Branch and Mr. Prince of the Dairy Branch. Mr. Jeffery and Mr. Dietz of the Livestock Branch successfully completed studies toward Ph.D. and M.Sc. degrees respectively.

Following is the Division report by branches.

DAIRY BRANCH

R. P. Dixon, B.Sc., M.Sc., P.Ag., Dairy Commissioner

GENERAL REVIEW

Milk production during 1971 showed a decrease of 60.6 million pounds or 4.0% compared to 1970. There were 7,000 more cows reported in milk on the June census. Average production per cow was 7,162 pounds.

The estimated farm value of milk production was $63,840,000 while the estimated factory value of dairy products was $74,413,000.

A system of supply management in the dairy industry was introduced in Ontario, Quebec and Prince Edward Island during 1971. An Alberta plan has been drafted and distributed and will be voted on by Alberta dairy farmers early in 1972.

EXTENSION ACTIVITIES

Extension activities included dairy production, herd management and the processing of dairy and frozen food products. The Branch compiled monthly newsletters for producers and dairy processors; also, information bulletins related to specific dairy topics were made available for distribution.

Dairy branch personnel inspected industrial milk producers, observing methods of housing, storage and handling of the raw product and dairy herd management.

The branch supervised examination of personnel who require licenses under the Alberta Dairymen's Act. Operators of bulk tank vehicles were regularly checked; a total of 70 bulk milk transports operated in Alberta. Branch personnel supervised the methods of bulk milk sampling and testing at processing plants. The number of farm bulk tanks in use increased from 1,305 to 1,438 installations.

ESTIMATED FARM VALUE OF ALBERTA MILK PRODUCTION 1971

The quantity, price, value and utilization of milk production during 1971 is reported in the following table. To indicate changes for the previous year, 1970 figures have been included.

	Year	Pounds	Milk Equivalent Pounds	Per Cent Total Milk	Price $	Value $
Butterfat for Creamery Butter	1971	18,300,000	522,877,000	35.6	.6981 per lb.	12,775,000
	1970	20,466,000	591,226,000	38.7	.6850 per lb.	14,038,000
Milk Purchased for the Manufacture of Butter as Butterfat	1971	3,387,000	103,635,000	7.1	1.0514 per lb.	3,561,000
	1970	3,276,000	94,651,000	6.2	.9620 per lb.	3,152,000
Farm Dairy Butter	1971	737,000	17,252,000	1.2	.6200 per lb.	457,000
	1970	849,000	19,867.000	1.3	.6200 per lb.	526,000
Milk for Cheesemaking	1971		45,738,000	3.1	3.68 per 100 lbs.	1,683,000
	1970		43,390,000	2.8	3.39 per 100 lbs.	1,469,000
*Milk for Concentrating and Milk and Butterfat for Ice Cream	1971		168,381,000	11.5	3.51 per 100 lbs.	5,910,000
	1970		170,813,000	11.2	3.36 per 100 lbs.	5,736,000
Fluid Milk Sales	1971		328,607,000	22.4	6.03 per 100 lbs.	19,815,000
	1970		321,995,000	21.1	5.89 per 100 lbs.	18,966,000
Cream Fluid Sales (Milk Basis)	1971		64,510,000	4.4	3.42 per 100 lbs.	2,206,000
	1970		64,720,000	4.2	3.36 per 100 lbs.	2,175,000
Milk Farm Home Consumed	1971		122,517,000	8.3	3.68 per 100 lbs.	4,509,000
	1970		127,400,000	8.3	3.39 per 100 lbs.	4,319,000
Fed Farm Animals	1971		94,755,000	6.4	3.68 per 100 lbs.	3,487,000
	1970		94,780,000	6.2	3.39 per 100 lbs.	3,213,000
Kept on Farm, Skim milk from Creamery Butter and Skim milk and Buttermilk from Dairy Butter	1971	487,151,000			.502 per 100 lbs.	2,446,000
	1970	549,941,000			.509 per 100 lbs.	2,804,000
Estimated Federal Subsidy	1971					6,635,000
	1970					6,517,000
Total	1971		1,468,272,000	100.0		63,484,000
	1970		1,528,842,000	100.0		62,915,000

*Does not include butterfat from creamery butter used in the manufacture of ice cream.

ESTIMATED PRODUCTION AND VALUE OF FACTORY DAIRY PRODUCTS

The following table shows the quantity, price and value of dairy products manufactured or processed in Alberta dairy manufacturing plants during 1971 with corresponding figures for 1970 added for the sake of comparison.

	Year	Quantity	Price $	Value $
Creamery Butter, lbs.	1971	26,774,000	.7001 per lb.	18,745,000
	1970	29,311,000	.6819 per lb.	19,987,000
Cheddar Cheese, lbs.	1971	3,449,000	.6300 per lbs.	2,173,000
	1970	3,357,000	.5213 per lb.	1,750,000
*Ice Cream, gals	1971	6,108,000	1.73 per gallon	10,567,000
	1970	5,634,000	1.73 per gallon	9,747,000
Fluid Milk Sales, lbs. (including processing charges)	1971	328,607,000	7.88 per 100 lbs.	25,894,000
	1970	321,995,000	7.74 per 100 lbs.	24,922,000
Cream Sales as Milk, lbs. (including processing charges)	1971	64,510,000	5.27 per 100 lbs.	3,400,000
	1970	64,720,000	5.21 per 100 lbs.	3,372,000
Skim milk & Buttermilk Sales for Human Consumption (including processing charges) lbs.	1971	28,240,000	4.83 per 100 lbs.	1,364,000
	1970	27,319,000	4.61 per 100 lbs.	1,259,000
Skim milk anl Buttermilk, lbs.	1971	65,572,000	.5020 per 100 lbs.	329,000
	1970	59,504,000	.5100 per 100 lbs.	303,000
Whey, lbs.	1971	32,144,000	.2510 per 100 lbs.	81,000
	1970	28,919,000	.2550 per 100 lbs.	74,000
**Miscellaneous Manufactured Products	1971			11,860,000
	1970			10,430,000
Total	1971			74,413,000
	1970			71,844,000

*Includes hard and soft ice cream.

**Includes concentrated milk products, cottage cheese, whey, butter, cheese other than cheddar and yoghurt.

DAIRY INSPECTION AND INSTRUCTION

A total of 770 plant inspections were made. Official check tests for butterfat were made on 12,974 shipments of milk and cream and 28,561 lots of churning cream were checked for grade. Of all the plant samples officially checked for test and grade, 1.2 per cent required official adjustment. Official weight certificates representing 644,050 pounds of butter were issued to Alberta processors under the Canadian Dairy Commission support policy.

LICENSING

Licenses Issued	1970	1971
Milk and Cream Testers Form "A"	234	221
Cream Graders Form "B(C)"	180	175
Plant Milk Graders Form "B(M)"	130	115
Tank Milk Graders Form "B(M)"	176	178
Dairy Manufacturing Plant Form "C"	91	87*

*Includes duplicate licenses issued to plants in which ownership changed during the year.

QUALITY CONTROL

Further workmanship competitions were discontinued because of revision of the federal butter grading system based on the frequency of inspection levels. The federal dairy division continued to grade Alberta cheddar cheese production.

Alberta creameries entered a total of 58 butter exhibits at the Brandon, Canadian National and Royal Winter Fairs in 1971 and were awarded 20 first, 34 second and 4 third place standings.

During the year the evaluation of commercial ice cream and cottage cheese produced in Alberta was carried on by panels of plant personnel at Edmonton and Calgary. All operating dairy processing plants were scored by dairy specialists of the branch on the basis of good housekeeping and plant improvement. Top scoring plants were evaluated and winners determined by supervisory staff. Thirty-five processing plants, scoring greater than 85 per cent, qualified for merit certificates.

To complement the provincial inspection program during 1971, teams of federal dairy division and dairy branch personnel completed surveys on all operating processing plants. By means of the joint approach, it was intended to formulate uniform standards and facilitate the issuing of registration certificates on a nation-wide basis.

MARGARINE

Periodic surveys were made throughout the province with respect to packaging and labelling of margarine at the retail level. Laboratory analysis were also carried out covering color content and composition.

The number of brands marketed by the major manufacturers declined while an increase in "house" brands was noted. There was a significant increase in the brands manufactured from rapeseed oil.

The following table is a summary of the work relative to the Margarine Act carried out in 1971.

	Samples Cecked	Compliance	Non-Compliance
Color	8	5	3
Composition	7	7	0
Packaging	49	48	1
New Cartons	18	18	0

DAIRY CATTLE IMPROVEMENT SERVICE

The principal activity of this section during 1971 was the Milk Recording Program. Extension activities continued in cooperation with other branches and divisions.

The development of a computerized D.H.I. program was commenced in cooperation with the systems design and data analysis branch. The centralization of all D.H.I. testing in the O. S. Longman Laboratory Building, Edmonton was completed in October 1971.

MILK RECORDING

A total of 21,936 cows were enrolled on the Milk Recording Program in 1971. Milk production reached an all time record high with an average of 12,206 pounds of milk per cow-year; butterfat production averaged 429.7 pounds per cow-year.

There were 507 herds under test in 1971, an increase of 3 herds compared to 1970. There were, however, 1,083 more cows tested in 1971 with this increase due to the larger size of the herds on test; the average number of cows per herd reached a record high of 43.3 cows.

MAIL ORDER

This was the basic program offered to 282 herd owners throughout the province. Monthly milk samples were lifted by the herd owners from individual cows and forwarded to one of the dairy branch testing centres.

The following table shows the number of herds and cows tested under the mail order system during the past three years.

	1969	1970	1971
Number of herds	304	289	282
Number of cows	10,341	10,408	10,746

OWNER-SAMPLER ROUTE PLAN

This program operated in the Edmonton and Calgary areas.

The following table shows the number of herds and cows tested under the Owner-Sampler Route Plan Program by centres during the past three years:

	1969	1970	1971	1969	1970	1971
		Edmonton			Calgary	
Number of Herds	171	171	184	48	44	41
Number of Cows	7,933	8,256	8,857	2,337	2,189	2,333

The 3 route plan fieldman made 3,060 farm visits, ear-tagged 2,882 heifer calves and maintained calf record books for 223 herd owners enrolled on the Route Plan Program.

The Calgary route plan fieldman was again actively involved with herd testing on the Calgary Quality Milk Control Program.

The Calgary Route Plan Program was extended to include dairymen in the Brooks area on a permanent basis in April 1971, bringing to 55 the number of herds serviced by the Calgary Route Plan Program.

TESTING CENTRES

Centralization of Dairy Herd Improvement testing in the O. S. Longman Laboratory Building, Edmonton was completed with the transfer of the Lethbridge testing centre in October 1971.

The following table shows the number of tests conducted at each centre during the past three years:

Testing Centre	1969	1970	1971
Calgary	16,752[1]	—	—
Camrose	13,458	13,350	7,449[4]
Edmonton	84,976	104,643	126,116
Fairview	2,587	3,225[3]	—
Lethbridge	9,745	10,019	9,729[6]
Red Deer	18,749	20,445	16,137[5]
Vermilion	4,966	407[2]	—
	151,233	152,089	159,431

1 Calgary testing centre closed August 1, 1969
2 Vermilion testing centre closed December 1, 1969
3 Fairview testing centre closed October 1, 1970
4 Camrose testing centre closed June 1, 1971
5 Red Deer testing centre close August 1, 1971
6 Lethbridge testing centre closed October 1, 1971

SUMMARY

The average production of all cows on test showed an increase of 110 pounds of milk, and a decrease of 6.1 pounds of butterfat over the previous year.

The following table summarizes the Milk Recording Program for 1971. Comparable figures for 1969 and 1970 are included.

	1969	1970	1971
Number of herds under test	523	504	507
Number of cows under test	20,611	20,853	21,936
Average number of cows per herd	39.3	41.4	43.3
*Number of cow-years	15,136	15,611	16,220
Average number of cow-years per herd	28.9	31.0	32.0
Average production of milk (lbs.)	11,602	12,096	12,206
Average production of butterfat (lbs.)	417.5	435.8	429.7
Average test (%)	3.59	3.60	3.52

*Herd averages on the basis of cow-years. The total number of cows on test during the year was used in determining the herd average. Where a new cow was placed on test, or a cow was sold or died, only that part of the year in which she produced was used.

REPORTS AND COMPETITIONS

Annual reports, showing both total and average milk and butterfat production, were sent to all herd owners and districts agriculturalists' offices. A total of 12,546 certified milk and butterfat production records were issued. The co-operative program of certification of production for cows in herds transferring from the provincial milk recording program to the federal R.O.P. program was continued. Dairy branch data provided the basis for scoring production and herd improvement competitions conducted by the Alberta Dairymen's Association.

DAIRY AND FOOD LABORATORY SERVICES

The main functions of the laboratory were as follows:

1. To provide analytical and consulting services to the food industry.
2. To safeguard the consumer by ensuring that food products meet the quality and compositional standards established by federal and provincial authorities.
3. To provide analytical services to other provincial agencies in their programs closely related to food production, quality, standards, sanitation, food contamination with agricultural chemicals, selectivity of animals, etc.

The laboratory services were available to food producers, food processors, the local health units, the general public and to all government agencies involved in production, marketing, regulatory work or related fields concerning foods and contaminants in the food chain.

As in the past years, the majority of samples were submitted to the laboratory by public health inspectors, department of agriculture personnel, fish and wildlife officers, processing plants, food producers and consumers.

A total number of 21,119 samples, involving 70,967 various tests were analyzed during 1971. The following table indicates the type and number of samples submitted and the number of tests performed. The corresponding figures for 1970 are in brackets.

Type of Samples	No. of Samples Analyzed	No. of Tests Performed
Milk and Cream	14,492 (13,701)	51,798 (47,132)
Butter	1,263 (1,742)	2,712 (3,289)
Cheese and cultured Products	1,074 (403)	5,219 (1,811)
Ice Cream and Frozen Desserts	1,704 (965)	5,019 (2,921)
Dry and Evaporated Milk	36 (30)	132 (92)
Microbiological Plant Survey	20 (30)	117 (135)
Meat Curing and Pickling Brines	1 (4)	5 (20)
Radioactivity in Dairy Products	15 (45)	15 (45)
Eggs and Egg Products	186 (151)	1,231 (168)
Meat and Meat Products	369 (601)	1,549 (1,314)
Vegetables	8 (18)	8 (18)
Fish and Wildlife	372 (727)	372 (727)
Forage and Cereals	88 (43)	100 (43)
Water	66 (24)	172 (41)
Human Specimens (Blood, Tissues, etc.)	2 (20)	2 (20)
Soil	2 (25)	2 (25)
Washing and Sanitizing Compounds	210 (223)	420 (446)
Miscellaneous	1,159 (767)	2,021 (1,657)

While the number of samples analyzed during 1971 did not change significantly from the previous year, the number of analyses performed increased sharply. This increase can be attributed to a larger number of problems in the food processing industry and the greater public demand for a safer product.

In addition to the samples listed in the table, the Dairy and Food Laboratory tested during the same period, 132,077 milk samples for butterfat content. These samples were analyzed for the Dairy Cattle Improvement Service program. The detailed description of this program is provided elsewhere in the dairy branch report.

During 1971 the laboratory analyzed 1,069 samples of foods, feeds, fish and wildlife specimens and other samples for the presence of pesticide and herbicide residues. The entire pesticide-herbicide residue testing program was carried out under the coordination of the Alberta Department of Agriculture Food Residue and the Alberta Interdepartmental Pesticide Committees. Therefore, this service was provided, as in the past years, for various divisions of the Department of Agriculture, Public Health, Lands and Forests and other provincial agencies.

A considerable number of milk samples were analyzed for the presence of Q-fever and antibiotic residues. A total of 6,610 milk samples were tested for Q-fever and a detailed report was prepared for the provincial and federal health authorities. Of the 6,640 milk samples analyzed for antibiotic residues, 0.81 per cent were found positive as compared to 0.50 per cent in 1970.

Due to rapid changes in analytical procedures, instruments, and the variety of chemicals used in agriculture, it was necessary to purchase some additional instruments. A mass spectrometer-gas liquid chromatograph combination was purchased in August 1971, and will be installed at the laboratory some time in 1972. Because of these rapid changes in analytical methods, it was necessary for the laboratory staff to participate in various scientific meetings, seminars and courses.

In May of 1971 the laboratory staff organized and conducted the Sixth Pesticide Residue Analysis Seminar (Western Canada) in Edmonton. The Seminar was restricted to persons directly involved in pesticide residue analysis and was attended by 43 chemists, representing federal and provincial laboratories and universities engaged in residue research in western Canada as well as Ontario and the western United States. The Proceedings of this seminar were compiled by the laboratory staff and distributed to all participants, university libraries and numerous laboratories conducting residue investigations.

DAIRY FARM INSPECTION

The major change noted in the dairy farm inspection program during 1971 was the number of smaller milk processing plants that converted milk receiving from can shipments to bulk pick-up at the farm. In many instances this led to an improvement in milk production facilities and improved milk quality.

During the latter part of 1971 initial steps were taken with respect to a province-wide mastitis control program involving all fluid milk producers.

The transfer of the regional dairy specialist from the Peace River district to Edmonton necessitated the temporary handling of farm inspection responsibilities in that area from Edmonton.

Regular farm inspections were made and reports written at the time of each visit. Recommendations were made where necessary and discussed with the producer concerned.

Samples were collected monthly from all fluid milk producers and producer-distributors and subjected to laboratory analysis for bacterial quality. Other miscellaneous tests were carried out as required.

The following table summarizes the dairy farm inspection work for the period December 1, 1970 to November 30, 1971. The comparable figures for the previous year are also tabulated.

	1970	1971
Number of Fluid Milk Producers	677	661
Number of Producer-Distributors (raw milk)	4	4
Total Producers	681	665
Inspections of Dairy Farm Premises	1,805	3,242
*Miscellaneous Farm Visits	985	1,539
Total Farm Visits	2,790	4,781
Milk Samples Analyzed (Standard Plate Count)	3,090	9,228

	Number		Per Cent	
	1970	1971	1970	1971
Good 30,000 or less	2,412	7,538	78.1	81.7
Fair 31,000 to 50,000	221	733	7.1	7.9
Poor 51,000 to 75,000	146	404	4.7	4.4
Non-compliance >75,000	311	553	10.1	6.0
Suspensions (non-compliance milk)			4	5
(premises)			—	2
(antibiotics)			—	10
Total suspensions			4	17

*Includes milk sampling, bulk tank calibrations and advisory calls.

FROZEN FOOD PLANTS

The administration of the Frozen Food Act, including licensing, inspections and instructional services to the frozen food industry was continued as a function of the dairy branch during 1971. There were 910 inspections made by branch personnel compared to 1,012 in 1970. Several plants changed from locker to processing plants and a few new ones were built during the year. As of December 1, 1971 there were 71 locker plants, 56 specialized processing plants and 1 animal food storage plant licensed under The Frozen Food Act.

The program of processed meat analysis was continued in 1971 with 51 samples checked for moisture, fat and dextrose. This program was instigated in 1969 as an assistance and educational program for all plant operators. Meat samples were also checked bacteriologically at the request of consumers.

All plants were scored by the field staff for the Merit Award competition. The top-scoring plants in each district were check-scored by branch supervisors. Merit Award Certificates were awarded to 41 operators for operations that offered a high standard of service and maintained acceptable sanitary standards.

During 1971 the Alberta Quick Freeze Locker Association was liquidated because of financial problems. As a result, Proficiency Shields were not awarded.

The following table was prepared from data supplied by monthly reports and covers the twelve-month period ending November 30, 1971. The previous year's figures are included for comparison.

	1970	1971
Number of Specialized Processing Plants	51	56
Number of Frozen Food Locker Plants	73	71
Number of Animal Food Storage Plants	1	1
Number of Lockers Available	11,796	10,908
Number of Lockers Rented	6,876	6,212
Percentage of Lockers Rented	58.3	48.8

The trend to fewer locker rentals continued in 1971 and the number of lockers available was also reduced by almost 10 per cent. Much of the decrease can be attributed to the conversion of locker plants to specialized processing plants.

The following table shows the total volume processed for home freezers and lockers by both locker and processing plants. The volume shows a healthy increase of 11.0 per cent for the year and changed the downward trend which existed during the last two years. The total was only slightly under the record year of 1968. A great deal of this increased volume is due to the very heavy pork run, with most plants operating their curing and smoking facilities over ideal capacity. This is verified by the 1.2 per cent increase in cured meats, or approximately 1 million pounds more than in 1970. When it is considered that about 1/3 of processed pork is cured, the increase in total volume of 3 million pounds is largely attributable to pork.

This table indicates the continued service of the small meat processor to the farm and smaller urban centres. Approximately 95 per cent of the total volume processed was for home freezers.

Year	Volume Processed for Lockers	Volume Processed for Home Freezers by Locker Plants	Volume Processed for Home Freezers by Processing Plants	Average Poundage Per Plant
1965	3,298,034	12,327,077	9,673,252	173,262
1967	2,504,085	14,742,301	13,397,796	218,887
1968	2,117,955	13,179,390	15,614,399	232,419
1969	1,618,271	13,462,259	13,733,563	226,883
1970	1,342,432	13,326,950	12,821,487	223,761
1971	1,507,560	15,981,846	14,847,054	242,747

The following is a summary of the amount and types of foods processed by all plants.

Year	Total Pounds Processed	Fresh Meat	Cured Meat	Lard	Fish	Poultry	Big Game	Game Birds	Fruits	Vegetables	Miscellaneous
		%	%	%	%	%	%	%	%	%	%
1960	18,509,247	77.8	9.6	1.2	.4	2.9	3.4	.1	1.5	1.9	1.2
1965	25,298,363	84.3	8.4	1.2	.3	.8	2.6	.1	.8	1.1	.4
1967	30,644,182	85.9	8.2	1.2	.1	.5	2.8	.0	.3	.7	.3
1968	30,911,744	86.5	8.8	1.1	.1	.3	2.1	.1	.2	.4	.4
1969	28,814,093	87.3	8.1	1.0	.1	.3	2.3	.0	.1	.2	.6
1970	27,746,321	85.7	9.0	1.2	.1	.5	2.7	.0	.2	.3	.3
1971	30,828,900	84.9	10.2	1.1	.1	.1	2.1	.1	.3	.5	.9

STAFF CHANGES — 1971

Resignations

Mr. J. D. Rasmussen—Dairy Specialist, Camrose—August 31st, 1971.

Mr. W. E. Duncan—Dairy Specialist, Calgary—September 30th, 1971.

Transfers

Mr. K. J. Spiller—Supervisor, Food Technology to Regional Livestock Supervisor—November 15th, 1971.

Mr. F. R. Hutchings—Dairy Specialist, Fairview to Edmonton—September 1st, 1971.

LIVESTOCK BRANCH

W. C. Gordon, B.Sc., P.Ag., Livestock Commissioner

GENERAL REVIEW

Severe weather conditions in November and December, 1970, followed by heavy snowfall and extremely cold weather in January, 1971, taxed feed supplies in Alberta although supplies eventually proved to be adequate. A moderately early spring helped to ease the demand. Feed supplies in terms of both grain and roughage were ample following the 1971 harvest. In addition, a relatively long, open fall allowed for movement of feed and bedding to areas of use thus farmers were well situated with the advent of the winter feeding period. Increased barley acreage and favorable yields resulted in some reports of distress selling during harvest, but continued movement of feed grains on export and more optimism on eventual marketing opportunity contributed to feedlot prices holding above initial board price. Pastures throughout the province were good to excellent except for some deterioration in the southeast part of Alberta in last summer and fall.

Cattle marketings at public stockyards and packing plants for the first eleven months of 1971 were up 3.3% from the same period in 1970. The monthly average price for good slaughter steers on the Calgary market ranged from a low of $30.26 per cwt. in September to a high of $33.17 in December.

The inspected Alberta hog kill increased by 104,000 head or approximately 12½% in the first eleven months of 1971 compared to the same period in 1970. Weekly marketings were generally in the area of 35,000 to 40,000 head per week with less numbers marketed in the last half of the year. The weekly Alberta average price for index 100 hogs was lowest for the week ending April 30 at $18.79 and highest at $25.40 for the week ending December 11.

The June 1 Statistics Canada estimate showed an increase in sheep numbers of 25.5% over the previous year. This was the second consecutive yearly increase in sheep numbers and the 1971 increase was double that of 1970. The monthly average price of good lambs on the Edmonton market was highest in June at $29.76 per cwt. and lowest in November at $21.12. Fall prices were considerably lower than one year ago and a severe disappointment to sheep producers.

CATTLE

Cattle numbers increased to 3,835,000 head, an all-time high according to Statistics Canada June estimate. Herd building continued in the beef industry. Interest in European cattle continued with the first Italian imports released from quarantine in mid-summer. Cattle on feed continued at high levels.

BRAND INSPECTION RECORD OF LIVE CATTLE AND CALF SHIPMENTS OUT-OF-PROVINCE

	1967	1968	1969	1970	1971
British Columbia	45,479	56,543	46,381	31,714	11,465
Saskatchewan	2,637	8,489	18,642	10,562	4,234
Manitoba	3,949	23,020	10,887	5,184	3,162
Ontario	86,182	155,542	152,399	115,377	79,957
Nova Scotia	42				21
Quebec	15,476	29,934	13,603	7,111	1,340
New Brunswick	16	95	16	52	
United States	3,504	25,148	15,749	11,010	4,805
Newfoundland					
Prince Edward Island	151				
Total	157,436	292,771	257,677	181,010	104,984

CATTLE IMPROVEMENT PROGRAM

Warble Control Area Assistance Policy

Seventeen municipalities set up Warble Control Areas bringing the total to 39 containing 65 percent of Alberta cattle. These areas received an assistance grant covering 50 percent of administration costs to a maximum of $2,500 plus a publicity grant per cattle owner of $1.00 per farm in the first year of operation, 50 cents in the second year and 25 cents for the third, fourth and fifth year of operation.

The following municipal areas entered into the first year of the program: Rockyview M.D. No. 44, Paintearth County No. 18, St. Paul County No. 19, Two Hills County No. 21, Lac Ste. Anne County No. 28, Vulcan County No. 2, Willow Creek M.D. No. 26, Foothills M.D. No. 31, Pincher Creek M.D. No. 9, Cardston M.D. No. 6, Flagstaff County No. 29, Forty Mile County No. 8, Kneehill M.D. No. 48, Wheatland County No. 16, Minburn County No. 27, Bonnyville M.D. No. 87, Lethbridge County No. 26.

Beef Cattle Record of Performance Program

An annual report of the Alberta section of the federal-provincial beef cattle performance testing program is printed at the termination of each year's results in June.

The following table shows the participation by both commercial and purebred breeders in the last five years.

Year	Number of Herds	Number of Calves Weighed
1967	189	7,126
1968	278	10,960
1969	536	19,945
1970	750	30,006
1971	870	37,410

The Alberta Beef Cattle Performance Testing Advisory Committee met on January 18, 1971.

Recommendations include:

1. Acceptance of Fort Macleod Economy Test Station as a performance test station,
2. Minimum performance standards for sale of bulls from Alberta Beef Test Station,
3. That mileage equalization payments to and from the Alberta Beef Test Station be discontinued,
4. That the Alberta Progeny Test Assistance Policy be terminated until the industry formulates its needs.

The Alberta Beef Test Station completed its first year in April, 1971. Sixty one head of yearling bulls sold in the sale that followed for an average price of $733.85.

Grants under the municipal scale purchase policy were made on 10 scales in 1971 to Special Areas 2, I.D. 17, Counties 25, 23, 9, 4, 30, 27, 21 and 3.

Artificial Insemination

Statistics compiled in 1971 show that 164,314 cows were artificially inseminated in 1970. A total of 50,410 head were serviced to dairy sires while 113,904 head were serviced to beef sires. The use of dairy sires changed very little from 1969, however, the use of beef sires increased by 84%. The growth trend of the Alberta A.I. industry from 1966 to 1970 is shown in Table 1.

TABLE 1
COWS SERVICED

Year	Beef Sires	Dairy Sires	Total
1966	36,699	55,340	92,039
1967	42,003	52,997	95,000
1968	44,310	52,243	96,553
1969	62,919	51,164	114,083
1970	113,904	50,410	164,314

As indicated in Tables 2 and 3, the increase in the beef sector was mainly due to the influence of the imported breeds, specifically Simmental and Limousin. Cows bred to Simmental and Limousin sires increased by 22,929 and 27,690 respectively from the previous year.

Inseminating businesses serviced 108,522 cows, which is an increase of 20% over 1969. Direct semen sales to farmers and ranchers more than doubled from 1969 to 1970 and accounted for 55,792 cows.

Semen exports, particularly to the United States, amount to 657,141 vials in 1971.

TABLE 2

FIRST SERVICES BY INSEMINATING BUSINESSES

Breed	1969	1970
Ayrshire	1,722	1,332
Brown Swiss	2,615	2,402
Guernsey	1,747	1,306
Holstein	42,206	39,186
Jersey	1,895	1,522
Other	426	116
Total Dairy	50,611	45,864
Angus	9,354	8,780
Charolais	10,719	9,237
Hereford	10,500	10,529
Limousin	541	10,969
Red Poll	234	255
Shorthorn	2,571	2,204
Simmental	3,669	14,423
Maine Anjou		
Murray Grey		
Welsh Black		
Other	731	2,605
Not Separated	1,821	3,656
*Total Beef	40,140	62,658
Total Dairy & Beef	90,751	108,522

*Includes cows of ALL BREEDS bred to beef sires

TABLE 3

DIRECT SEMEN SALES TO CATTLE OWNERS (VIALS)

Breed	1969	1970
Ayshire	121	
Brown Swiss	60	3,098
Guernsey	86	
Holstein	553	2,585
Jersey	261	
Other		
Total Dairy	1,081	5,683
Angus	2,418	3,201
Charolais	10,410	7,530
Hereford	2,076	2,566
Limousin	2,488	24,065
Red Poll		
Shorthorn	478	348
Simmental	6,567	21,786
Maine Anjou		601
Murray Grey		1,510
Welsh Black		936
Other	3,647	1,514
Total Beef	28,084	64,057
Total Dairy & Beef	29,165	69,740

The following licenses were issued for 1971: 69 inseminating businesses, 6 branch offices, 7 semen producing businesses, 293 Class I and Class II inseminating technicians and 34 Class III and Class IV semen processing technicians. Seventeen insemination training permits and 1 specified herd breeding permit were also issued. In addition, 13 new inseminating businesses and 2 new semen producing businesses were licensed.

Training in A.I. at Vermilion College in 1971 was taken by 15 students in the three month reproduction course, 35 students in the one month A.I. courses and 20 technicians in the five day upgrading course.

Livestock Feeder Associations

Forty-two feeder associations operated under the Feeder Association Guarantee Act during the 1970-71 season. There were 2,041 active members who fed 89,623 cattle and 1,516 lambs, utilizing a credit of $15,365,261.11.

Eleven associations operated under annual guarantee and thirty-one

1970-71 FEEDER ASSOCIATIONS

Association	No. of Cattle	No. of Sheep	No. of Members	Accumulated Purchases
Acme	4,060		77	678,668.55
*Andrew Willingdon	835		28	128,930.72
Barrhead	3,902		79	678,681.43
Bashaw	3,695		97	665,300.82
Battle River	4,730		126	895,134.86
Big Valley	1,805		37	330,139.14
*Bonnyville	1,162		29	185,553.35
Bowden	2,401		65	461,345.27
Bow Valley	156		6	28,047.08
*Cardston	1,635	190	37	284,334.71
Carstairs	3,062		55	515,261.92
Central Alberta	4,745	236	105	771,692.20
*Central Peace	866		20	136,991.10
Delburne	1,017		32	182,842.08
*Drumheller	2,017		44	361,886.40
East Olds	3,062		72	523,226,86
Fort Macleod	733		21	123,836.88
Glenwood	962		20	174,747.98
Grande Prairie	2,857		72	461,012.66
Innisfail	1,609		40	261,329.43
*Knee Hill Valley	2,046		54	464,390.83
Knee Hill Valley East	1,388		29	245,486.57
Lac La Biche	500		17	74,807.93
Little Bow	1,169		33	179,329.53
*Mannville	1,687		38	238,806.09
*Marwayne	2,770		53	441,986.11
Meadowbrook	2,217		42	395,136.10
*North Peace	2,223		63	323,599.85
Okotoks	1,297		31	214,817.95
Parkland-Stavely	3,291		66	599,111.94
Pincher Creek	1,691		40	250,020.07
Ponoka	4,148	25	86	729,655.58
Raven	3,148		67	530,933.67
*Raymond-Magrath	177		4	31,218.94
Red Deer	1,637		37	273,348.41
Swan Valley	54		5	9,996.46
Taber	3,194		64	578,472.53
*Two Rivers	4,964	1,065	122	800,843.92
Valleyview	838		22	137,241.71
Vegreville	1,484		32	242,660.46
Western	4,188		67	723,559.38
Westlock	201		7	30,873.64
Total	89,623	1,516	2,041	15,365,261.11

*Associations operating under annual guarantee associations operated under the continuous guarantee. Loans outstanding at August 31, 1971, under continuous guarantees totalled $6,954,213.87.

New associations starting operations were Bonnyville, Lac La Biche, Swan Valley, Bow Valley and Westlock.

SUMMARY OF FEEDER ASSOCIATION OPERATIONS OVER THE LAST FIVE YEARS

Feeding Season	No. of Assoc.	No. of Members	Cattle	Sheep	Amount of Credit
1966-67	33	1,229	46,317	3,962	6,250,503.86
1967-68	32	1,162	45,084	2,158	6,118,552.50
1968-69	33	1,204	46,738	1,247	6,860,869.46
1969-70	37	1,680	78,411	1,174	14,138,687.74
1970-71	42	2,041	89,623	1,516	15,365,261.11

SWINE

Hog prices continued to decline for the first quarter of 1971 thereby exerting substantial financial pressure on pork production operations, particularly in Western Canada. Market hogs sold in Alberta at relatively steady weekly average prices ranging from $20.87 to $22.54 until mid-March. Prices for hogs indexing 100 declined to a weekly average low for the year of $18.79 per cwt. dressed, April 30.

After the first of May, prices showed a steady improvement to average weekly prices in December of $23.79 to $25.40. Low market prices for hogs resulted in continued depression of breeding stock prices experienced in the fall of 1970. Average prices for boars over all breeds at Edmonton and Calgary this year was $127.85 compared to $161.45 for 1970. A similar situation was realized for sows which sold for an average price of $111.38 this year compared to $156.89 last year.

Hog producers were advised to retain their hog grading warrants for hogs sold in 1971 because it is possible that a deficiency payment may be made under the Agricultural Stabilization Act. The stabilization price Edmonton basis is $24.14 per cwt. dressed. This price is calculated on the basis of 80% of the weighted average price for the period 1961 to 1970.

Numbers of pigs sold through the Alberta Hog Producers' Marketing Board were 1,012,712 for the first half and 881,925 for the second half of 1971. Total marketings in the latter period were down 12.9% from those in the former period. The number of sows sold in the last six months was 52.6% higher at 12,722 compared to 8,334 during the first six months of 1971. Total Canadian inspected slaughter from January 1 to July 3 was 5,059,713 as compared to 4,683,046 for the period July 3 to December 31, which represents a decline of 7.4% from the first half of the year.

The continuation of limited export markets for wheat and above normal production of coarse grains this past year resulted in ample feed supplies being readily available. Farmers have been determined to keep livestock production at a high level to maintain incomes, thereby also improving feed grain prices. This point is evidenced by the fact that total number of pigs on Alberta farms as of June 1, 1971, was 1,685,000 up 85,000 from a year earlier. In addition, Canada's 1971 pig production has reached an all-time annual high of over 9¾million.

The United States surcharge imposed on pork products in the middle of August placed markets under some pressure. Fortunately, there was a 19% increase in domestic disappearance of pork during the past year and there was some expansion of export markets off the North American continent.

Removal of the U.S. 10% surcharge in December should help improve the movement of pork products to that Country in the coming year.

Another relatively successful year has been completed by the Alberta Hog Producers' Marketing Board. On March 11, the seven man provisional board appointed in 1969 by the Lieutenant Governor, had completed their task of setting the wheels of the new marketing agency into operation. An election was held to appoint 35 delegates and 7 directors to replace the provisional board. Mr. O. Anderson retired as general manager of the Marketing Board on October 1, 1971. Dr. H. B. Jeffery, formerly with the Animal Industry Division, Alberta Department of Agriculture, has been appointed the new manager.

During 1971 greater co-ordination of the efforts of the Alberta and Canada Departments of Agriculture had been experienced through the Alberta Swine R.O.P. Advisory Committee. The Veterinary Services Division has agreed to supervise the health standards which were written into a new set of guidelines governing swine R.O.P. testing in Alberta. The first official boar performance test was in process with 81 boars on test at the Lacombe Test Station at year end. Response by breeders to the prospect of a well integrated home and station testing program was enthusiastic.

A training program was initiated with the Canada Department of Agriculture in December to familiarize livestock branch staff with ultrasonic measurement of swine meat production traits.

A total of 53¾ sire progeny groups entered test at Lacombe and Edmonton test stations. One thousand one hundred and eighty-seven boars and 741 gilts of 7 purebred and 5 crossbred lines were evaluated in 1971 on the Alberta section of the Canada Record of Performance for Swine. Somewhat fewer boars were evaluated than in the previous year, but average performance remained relatively constant.

The accompanying tables list information relevant to the swine industry in Alberta and to the activity of the swine section of this branch.

ALBERTA SECTION, CANADA RECORD OF PERFORMANCE FOR SWINE
BOAR PERFORMANCE HOME TEST

Breed	No. Tested			Av. Backfat (inches) Adj. to 200 lbs.			Av. Age of Boars (days) Adj. to 200 lbs.		
	1969	1970	1971	1969	1970	1971	1969	1970	1971
Yorkshire	672	890	690	.78	.79	.76	181	180	181
Lacombe	251	289	164	.86	.84	.84	169	166	166
Hampshire	256	350	143	.79	.78	.79	173	185	182
Spot			10			.92			179
Pol. China	6	22	5	.71	.70	.79	182	192	188
Landrace	18	12	24	.76	.79	.77	208	191	182
Pietrain			1			.59			221
Spot x Lac.	27	86	136	.76	.84	.86	156	160	164
York x Lac.	7		4	.66		.94	150		172
York x Hamp	3	18	5	.84	.90	.62	191	180	167
York x Land.			1			.83			237
York x Duroc. x Hamp.			4			.70			169
Hamp. x Lac.	21	20		.75	.80		150	158	
Pol. China x York	12	10		.72	.64		168	180	
Totals and Av.	1,273	1,697	1,187	.79	.80	.79	176	178	177

ALBERTA SECTION, CANADA RECORD OF PERFORMANCE FOR SWINE GILT PERFORMANCE HOME TEST

Breed	No. Testel	Av. Backfat (inches) Adj. to 200 lbs.	Av. Age of Gilts(days) Adj.to 200 lbs.
Yorkshire	247	.81	193
Lacombe	81	.88	184
Hampshire	133	.84	196
Spot	11	.98	186
Pol. China	5	.79	191
Landrace	6	.75	172
Spot x Lac.	207	.92	174
York x Lac.	14	.90	207
Hamp. x Lac.	22	.86	178
Lork x Landrace	9	.88	238
York x Duroc x Hamp.	6	.69	178
Totals and Av.	741	.86	187

AVERAGE PRICE AT SIX ALBERTA SWINES SALES EDMONTON (2), CALGARY (1), CAMROSE (3)

	Boars				Sows			
	1970		1971		1970		1971	
Breed	No.	Av. Pr.	No.	Av. Pr.	No.	Av. Pr.	No.	Av. Pr.
Yorkshire	288	148.08	245	126.58	366	145.18	273	111.53
Lacombe	55	139.42	39	106.12	41	143.90	32	115.94
Hampshire	12	236.67	6	130.00	3	213.33	12	86.46
Landrace	1	170.00	2	82.50	4	106.25	0	00.00
Tamworth	2	102.50	0	00.00	0	00.00	0	00.00
Poland China	12	136.25	19	115.26	1	110.00	12	134.17
Large Black	0	00.00	2	127.50	0	00.00	0	00.00
Totals & Av.	370	149.10	313	123.20	415	145.09	329	111.87

AVERAGE PRICE FOR ALL SWINE BREEDS AT CALGARY AND EDMONTON SALES

	1970		1971	
	No.	Av. Pr.	No.	Av. Pr.
Boars	234	161.45	189	127.85
Sows	305	156.89	223	111.38

AVERAGE PRICE FOR CAMROSE R.O.P. SALE

	Boars				Sows			
	1970		1971		1970		1971	
Breed	No.	Av. Pr.	No.	Av. Pr.	No.	Av. Pr.	No.	Av. Pr.
Yorkshire	42	105.00	37	91.49	37	110.00	22	108.89
Lacombe	14	102.00	14	103.57	8	105.00	8	101.88
Poland China	3	145.00	4	85.00	0	00.00	2	120.00
Totals & Av.	59	106.78	55	94.09	45	108.94	32	107.89

1971 PRICE AVERAGE FOR ALL SWINE BREEDS AT SPRING AND FALL SALES

	Boars		Sows	
	No.	Av. Pr.	No.	Av. Pr.
Spring Sales (2)	106	148.52	162	123.90
Fall Sales (4)	207	110.23	167	100.07

ALBERTA HOG GRADINGS 1967-1971

Grade	1967 %	1968 %	Index	1969 %	1970 %	1971 %
A	40.20	43.66	112	0.15	0.09	0.14
B	42.40	40.95	110 + 109	1.85	1.44	2.18
C	7.60	6.35	107 + 105	11.21	10.88	13.70
Light	2.10	2.50	103 + 102	29.75	29.90	31.48
D	0.60	0.68	100	17.27	16.84	15.50
Heavy	4.70	3.80	98 + 97	21.52	20.88	17.34
Extra Heavy	1.90	1.48	95 + 92	6.42	6.10	4.58
Ridgling	0.60	0.58	88	1.18	1.04	0.71
Stags	0.40	0.25	light + 80	2.29	2.02	3.22
Sows	4.00	3.82	heavy	7.76	10.23	10.63
			Ridglings	0.60	0.56	0.52
			Stags	0.18	0.12	0.14
			Sows	3.28	4.13	4.46

Numbers of stags and sows marketed are excluded in calculating percentages for the first eleven grades hence percentage shown will total 100 for these grades. Percentages for stags and sows are calculated as a percentage of total pigs marketed including stags and sows.

NUMBER AND VALUE OF INSPECTED SLAUGHTER HOGS OF ALBERTA ORIGIN

1971	Total Number	Value Per Hog	Total Sale Value
1967	1,562,856	48.76	66.198,759.00
1968	1,696,952	42.62	72,316,158.00
1969	1,415,524	54.53	77,188,633.00
1970	1,620,089	48.42	78,440,135.00
1971	2,037,305	36.27	73,893,052.00

ESTIMATED NUMBERS OF SWINE ON ALBERTA FARMS AT JUNE 1, 1967-1971, INCLUSIVE

Year	Number	% Change
1967	1,254,000	
1968	1,245,000	
1969	1,220,000	
1970	1,600,000	
1971	1,685,000	+ 5.3%

SHEEP

The total number of sheep and lambs on farms in Alberta at June 1, 1971, was estimated at 310,000 head, up 25.5 per cent from one year earlier. Increases in the sheep population occurred in all census divisions in 1971 with the exception of census divisions 6, 8 and 14. The largest increase occurred in census division 11. Lamb and mutton slaughterings originating in Alberta at December 1, 1971, were up 26% from 1970.

ESTIMATED NUMBER OF SHEEP IN ALBERTA AT JUNE 1, 1971

Year	Number	% Change
1967	287,000	— 4.8%
1968	245,000	— 14.6%
1969	218,000	— 11.1%
1970	247,000	+ 13.3%
1971	310,000	+ 25.5%

Market prices for good lambs in Edmonton were considerably lower in 1971 compared to 1970.

AVERAGE PRICES IN EDMONTON FOR GOOD LAMBS, 1971

(dollars per hundred weight)

	197	1970
January	$25.64	$28.34
February	26.21	28.23
March	26.51	30.02
April	26.59	28.54
May	28.55	32.50
June	29.76	—
July	27.40	—
August	24.27	26.50
September	21.41	24.31
October	21.13	23.91
November	21.12	23.35

The depressed prices for lambs, together with extremely low wool prices, resulted in a dismal profit picture for sheepmen this year.

North Central Sheep Sales of Edmonton marketed 7,028 lambs, 1,338 ewes and 23 rams for a total of 8,389 head. This represents a 17% increase in the number of lambs handled by the organization. Ewe prices were down considerably from one year ago, with prices ranging from $15.00-$25.00 depending upon quality. Many excellent ewe lambs were sold as fat lambs since there were no replacement ewe buyers.

Ram prices were down slightly due to the lateness of the sales as producers are buying rams early in the year direct from seedstock producers. Throughout the province most purebred ram producers had sold all their yearling rams by early fall and excellent sales were also reported for ram lambs.

RAM NUMBERS AND PRICES AT PUREBRED SHEEP SALES NORTH-CENTRAL (EDMONTON) AND EDMONTON AND CALGARY

	1970		1971	
Rams	No.	Av. Pr.	No.	Av. Pr.
Suffolk	66	$ 83.50	64	$ 76.64
N. C. Cheviot	13	76.35	5	73.00
Corriedale	12	83.15	2	96.25
Hampshire	11	69.80	5	73.00
Dorset	3	71.00		
Lincoln	2	55.00		
Southdown	2	60.00		

Twenty-six applications were processed under the Federal-Provincial Transportation Assistance Policy for breeding ewes. This included 4,432 ewes for a total amount of $8,836.14. This compares with nine applications for 1,286 head in 1970.

Four rams were purchased for producers under the LLB Policy for a total cost of $515.00. There were 167 ewes purchased under this policy for a total cost of $4,696.41. Five additional rams were selected for producers at the Edmonton Fall Sale but they were billed directly to the purchasers.

Thirteen seedstock producers completed the Provincial Sheep Record of Performance program with a total of 1,082 head assessed. This compares with ten seedstock producers and 997 head from one year ago.

Sheep Notes and News continues to receive excellent response, with 1,000 people currently on the mailing list. This is an increase of 300 over 1970. The periodical is published every two months and contains information relative to sheep production, marketing, and research.

The Fourth Annual Sheep Symposium was again held in 1971 with 62 people in attendance. Speakers from Columbus, Ohio; Ottawa, Victoria, Saskatoon, Calgary and Edmonton participated in this year's program. Producer attendance was down from the previous year. Agribusiness and Department of Agriculture were well represented.

The Medicine Lake Sheep Pasture concluded an excellent year with increases in sheep patrons and numbers. Kleskun Lake Sheep Pasture reported a disappointing year with a drop in sheep numbers and a combined footrot and predator problem.

Footrot in sheep throughout the province appeared less severe in 1971 compared to 1970. Veterinary inspection at all auction markets contributed to better control and this service has proven very useful to a developing industry.

The sheep producers of the province have recognized the importance of organization and, as a result, all existing organizations within the province joined forces to form what was called the Alberta Sheep Council. This Council was instrumental in the development of a proposal for a Sheep and Wool Commission which is currently before the Lieutenant Governor in Council for approval. Once approved the Commission will be able to collect a levy of 10c per sheep or lamb marketed and 1c per pound of wool. The money will be used to finance the activities of the Alberta Sheep and Wool Commission, which include promotion, research, predator studies and other areas which will assist in the expansion of the sheep industry in Alberta.

FEED ANALYSIS AND ADVISORY SERVICE

The number of regular samples tested in 1971 was 4,192. This represents an increase of 29%. (In 1970, 3,253 regular samples were tested.) Fifteen hundred and eighty-two regular feed reports were issued, 357 of which were accompanied by comprehensive feeding recommendations. Two hundred and two recommendations were made for beef cattle, 94 for swine, 48 for dairy cattle, 10 for sheep and 3 for other livestock. An additional 1,555 "demonstration" samples were anaylzed for district agriculturists and other departmental staff. One thousand and forty-two research samples were analyzed.

Work continued on the *in vitro* analysis for estimation of energy content of forages. A comprehensive trace mineral survey was undertaken. A project to assess (1) the effects of growth stage on the selenium content of forages and (2) the effects of area, soil type and other factors on the selenium contents of feeds was begun.

The complete report of the soil and feed testing laboratory is included in the report of the Plant Industry Division.

ROYAL AGRICULTURAL WINTER FAIR, TORONTO

Alberta exhibited 15 carloads of livestock at the 1971 Royal Agricultural Winter Fair held in Toronto November 12-20. One carload of dairy cattle, one of horses, seven of registered beef and six of market cattle were shown.

The Alberta Department of Agriculture assisted the shipment by receiving nominations, co-ordinating selection, assembling and organizing the shipment to and from Toronto. The Canada Department of Agriculture paid 75% of the freight charges and the Alberta Department of Agriculture 25% as well as cost of feed. Breed Association appointees make the selection of entries.

Special Achievements:

Sandan Charolais Ltd., Erskine, Alberta—Grand Champion Charolais Bull; Grand Champion Female; Junior Champion Bull and Heifer;

Reserve Champion Bull; also First in the Group, Get of Sire and Pair of Bulls Classes.

Dave Durie, Lavoy, Alberta—Reserve Grand Champion Shorthorn Female; Reserve Senior and Junior Female; First in Breeders Herd and Get of Sire; Premier Breeder and Exhibitor of Shorthorn Cattle.

W. J. Boake and Sons, Acme, Alberta—Grand Champion; Junior Champion and Reserve Junior Champion Shorthorn Bulls, First of Pair of Bulls, Second in Breeders Herd and Get of Sire.

M. R. Boake, Acme, Alberta—Senior Champion Shorthorn Female.

Elmer Berg, Ardmore, Alberta—Reserve Grand Champion and Senior Champion Shorthorn Bull.

MacKenzie Bros., Mountain View, Alberta—Reserve Senior Champion Angus Female.

Summerset Ranching Co. Ltd., Didsbury, Alberta—Reserve Grand and Reserve Senior Champion Hereford Female.

Richards Farms Ltd., Red Deer, Alberta—Reserve Grand Champion Ayrshire Female; The Stansell Trophy for Best Ayrshire Cow and the Erle Kitchen Memorial Trophy.

E. J. W. Boake, Acme, Alberta—Champion Shorthorn and Reserve Grand Champion Market Steer.

Highland Stock Farms, Calgary, Alberta—Reserve Champion Group of Five Steers (Angus).

W. Gordon Young, Cayley, Alberta—Grand and Senior Champion and Reserve Junior Champion Percheron Mares; First in Get of Sire and Progeny of Dam.

Furber and Ray, Cremona, Alberta—Reserve Grand Champion Percheron Stallion.

Alberta Game Farm—Reserve Champion Belgian Draught Gelding.

Fleece Wool—L. R. Jensen, Magrath—Grand Champion Fleece; First in Canada fine staple.

The following tables summarizes the prizes won by the Alberta exhibtors.

	Horses	Beef Cattle	Market Cattle	Dairy Cattle	Fleece Wool
Grand Champion	1	3	—	—	1
Reserve Gr. Champion	1	4	1	1	—
Champion	1	6	1	—	1
Reserve Champion	2	6	1	1	—
First	4	16	2	1	1
Second	3	15	4	1	1
Third	1	8	3	—	4
Fourth	4	6	2	—	3
Fifth	2	9	2	2	1
Others	2	28	11	10	2
Total	21	101	27	16	14

HORSES

Horse numbers increased 2½% to 82,000 head. A general increase in all facets of the light horse industry is shown by increases in 4H and other light horse clubs. Horse hoof care, nutrition, management and showing courses continued in demand. A three month course in horse shoeing at O.A.V.C. was over-subscribed with 12 students enrolled.

REGIONALIZATION

Six regional livestock officers at Lethbridge, Calgary, Red Deer, Edmonton, Vermilion and Fairview assisted greatly in the supervision and advancement of Branch programs as well as with general extension, to meet the need of the growing livestock industry in Alberta.

COMMITTEES

Several committees chaired by branch personnel act in an advisory capacity to the department. Those operative in 1971 were: The Alberta Beef Cattle Performance Test Committee, The Alberta Artificial Insemination Advisory Committee, the Alberta Swine R.O.P. Advisory Committee, The Alberta Livestock Board and the Alberta Warble Control Committee.

The Alberta Cattle Commission acted as an advisory committee to the Minister with respect to the Horned Cattle Trust.

Branch staff acted as members of numerous departmental and interdepartmental committees, including the Soil and Feed Testing Supervisory Committee, the Grazing Reserves Advisory Panel, the Agricultural Products Marketing Committee, two sub-committees of the Alberta Agricultural Co-ordinating Committee (one on Animal Breeding and one on Nutrition), the Alberta Advisory Committee on Feed Testing and the Alberta Light Horse Advisory Committee.

SUMMARY OF LIVESTOCK EXTENSION

The livestock branch co-operated with the extension and colleges division to apply a co-ordinated livestock expansion program throughout the province. In this capacity, branch personnel serviced meetings, short courses, field days, production schools and numerous livestock shows and sales.

The following summarizes some of these duties for the first eleven months of 1971.

Farm Visits	966
Meetings and Short Courses	207
Livestock Show & Sales including 4H	139
Radio and T.V. Appearances	57
Farm Notes and Other Articles	66
Extension Bulletins Revised or Newly Printed	5

ACTS

THE HORNED CATTLE PURCHASES ACT

The following table shows the percentage of cattle with horns at the main market centres for the past four years with a base point of 1949:

	1949	1968	1969	1970	1971
Edmonton	19.9	13.7	15.3	15.6	16.0
Calgary	15.6	6.8	7.1	6.9	7.8
Lethbridge		7.6	7.3	7.7	9.6
Medicine Hat		3.9	4.3	4.3	4.8

The Provincial average for 1971 was 10.5%

THE ARTIFICIAL INSEMINATION OF DOMESTIC ANIMALS ACT

No amendments were made to the act. A minor amendment was made to the regulations under the act to consolidate license forms.

THE FEEDER ASSOCIATIONS GUARANTEE ACT

The regulations as established by the minister under this Act were amended late in 1971 raising the maximum loan to experienced feeders from

$10,000.00 to $13,000.00 and establishing the minimum age for participation for bona fide farmers at 18 years.

STAFF CHANGES

Transfers: Mr. M. S. Kuryvial from Regional Livestock Supervisor (Region 6) to Supervisor Artificial Insemination; Mr. K. K. Pfannmuller from Assistant Livestock Supervisor (Swine) to Regional Livestock Supervisor (Red Deer); Mr. K. C. Davies from Assistant Livestock Supervisor (R.O.P. Beef) to Supervisor Feeder Associations.

Appointments: Mr. D. S. Harbison as Assistant Livestock Supervisor (Swine); Mr. K. J. Spiller as Regional Livestock Supervisor (Region 6); Mr. R. D. Weisenburger as Assistant Livestock Supervisor (R.O.P. Beef).

Resignations: Dr. H. B. Jeffery from the position of Supervisor Artificial Insemination; Mr. A. W. N. Erichsen from the position of Supervisor Feeder Association.

POULTRY BRANCH

C. R. Milne, B.S.A., P.Ag., Poultry Commissioner

GENERAL REVIEW

Commercial egg production in Alberta totalled 44,000,000 dozen, comparable to 1970. This production at times of the year was short of specific size requirements, and eggs were imported to fill the gap.

Producer prices for grade A large during 1970 ranged from 35 cents to 42 cents per dozen. The average weighted price for all grades was 31.3 cents, compared to 32.2 cents in 1970.

Chicken broiler sales were up 4% over last year, and the burdensome inventory carry-over from 1970 was reduced to a workable level.

Production to the year end was 32,800,000 lbs., up fractionally from last year. Liveweight prices ranged from 19½ cents to 22 cents, averaging one cent higher than 1970.

Turkey production was comparable to 1970 at 17,000,000 lbs. Prices to growers were further depressed this year, averaging 1½ to 2½ cents lower than the previous year.

On November 16, the Minister of Agriculture requested that the three poultry marketing boards remove from their regulations any reference that would have the effect of restricting the interprovincial movement of eggs, broilers or turkeys.

EGG MARKETING AT REGISTERED STATIONS

	Total Eggs 00,000 doz.	Reg. Stations 30 doz. cases	Producer Wt. Price	Layers (DBS)
1967	39.3	522,413	25.9	2,500,000
1968	39.2	501,269	30.3	2,491,000
1969	40.6	495,026	37.6	2,537,000
1970	43.8	575,200	31.5	2,698,000
1971 (est)	44.7	590,000	31.3	2,700,000

POULTRY EVISCERATED IN REGISTERED STATIONS

(Pounds)

Year	Chickens		Fowl	Ducks	Geese
	Under 4 lb.	Over 4 lb.			
1967	26,935,000	834,000	2,079,000	4,000	436,000
1968	25,570,000	707,000	1,597,000	4,000	281,000
1969	28,072,000	617,000	1,560,000	3,000	213,000
1970	32,348,000	470,000	1,736,000	12,000	260,000
(est.) 1971	32,800,000	505,000	2,500,000	9,000	230,000

Turkeys

Year	Under 10 lb.	10 to 16 lb.	Over 16 lb.	Total
1967	2,666,000	5,090,000	9,780,000	17,536,000
1968	2,381,000	5,668,000	9,325,000	17,374,000
1969	1,948,000	4,927,000	7,430,000	14,305,000
1970	2,937,000	5,624,000	8,536,000	17,097,000
(est.) 1971	3,650,000	5,000,000	8,400,000	17,150,000

LICENSING AND BONDING OF DEALERS IN POULTRY AND POULTRY PRODUCTS

Produce Dealers—The Poultry Branch administers regulations respecting the licensing and bonding of dealers in poultry and poultry products under the Livestock and Livestock Products Act. Every dealer must be licensed. As protection to producers, all wholesale dealers must furnish a surety bond in favor of the minister ranging from $1,000 to $10,000 depending on the volume of business conducted. Licenses were issued as follows:

Year	First Receivers	Reg. Egg Grading Stations	Poultry Stations Reg.	Egg Packing Stations
1967	22	71	30	15
1968	23	62	28	22
1969	23	57	28	23
1970	23	45	23	28
1971	13	38	23	33

Hatcheries—The Poultry Branch administers regulations respecting the production and sale of chicks under the Alberta Livestock and Livestock Products Act. All commercial and custom hatcheries with an incubator capacity of 1,000 eggs or more are licensed. Since 1951 commercial hatcheries are required to furnish a surety bond, in favor of the minister, for protection of hatching egg producers, ranging from $2,000 to $5,000 depending on incubator capacity. Hatchery capacity and distribution of chicks and poults were as follows:

HATCHERY CAPACITY

Year	Commercial Hatcheries	Total Hatchery Capacity	Breeder Hatcheries
1967	3	31	5,208,167
1968	3	32	4,998,897
1969	3	29	5,332,316
1970	2	27	5,332,316
1971	1	28	5,503,580

CHICK DISPOSITION

Year	Hatch-ability	Chicks Hatched	Chicks Not Sold	Chicks Exported	Chicks Imported	Chicks Remaining In Province
1967	70.3	17,168,275	1,625,053	960,943	634,367	15,216,646
1968	68.8	16,706,092	1,546,906	1,308,692	265,127	14,115,621
1969	71.7	19,294,218	1,820,671	1,166,377	295,332	16,602,502
1970	72.8	20,951,624	2,072,000	945,169	318,903	18,253,358
1971	71.7	20,938,960	1,987,647	905,891	385,981	18,431,403

CHICK PRODUCTION BY TYPE

For Egg Production Type			For Broiler Production Type		
1971	1970	% Change	1971	1970	% Change
5,003,765	5,954,415	—16.0%	15,935,195	14,997,209	+6.3

POULT PRODUCTION

Year	Eggs Set	Eggs Imported	Poults Hatched	% Hatch-ability	Poults Imported	Poults Exported	Poults on Alberta Farms
1967	2,770,192	195,719	1,486,711	50.1	55,578	74,898	1,467,391
1968	2,414,221	373,232	1,318,929	47.3	8,809	35,188	1,292,550
1969	2,231,174	429,413	1,263,362	56.6	16,100	114,633	1,164,829
1970	2,404,646	392,166	1,424,039	59.2	23,722	139,489	1,308,272
1971	2,457,698	933,613	1,428,869	58.1	10,869	95,207	1,344,531

Poult production in Alberta hatcheries in 1971 was 1,428,869 poults, an increase of 0.5 percent from 1970.

Imports of U.S. franchised strains accounted for 80.2 percent of the white leghorn type chicks, 95 percent of the chicken broiler type chicks, 86.9 percent of the meat type turkey poults and 100 percent of the broiler type turkey poults.

IMPORTATION FROM THE UNITED STATES

	Chicken				Turkey			
	From Egg Production Matings		From Broiler Production Matings		From Meat Production Matings		From Broiler Production Matings	
	Eggs	Chicks	Eggs	Chicks	Eggs	Poults	Eggs	Poults
1967	126,936	44,601	275,564	299,333	236,790	44,520	143,000	4,740
1968	35,640	47,700	115,056	232,128	130,343	243	313,776	9,381
1969	18,720	30,380	268,146	253,553	383,209	3,500	140,940	12,600
1970	—	58,993	429,060	259,810	305,751	12,422	238,766	11,300
(est) 1971	—	27,980	102,654	253,373	681,191	6,469	455,352	3,700

FLOCK APPROVAL

The pullorum-typhoid testing of chicken and turkey flocks supplying hatching eggs continued in 1971. The number of females tested for egg replacement purposes decreased by 11.5 percent, and the number tested for broiler production decreased by 8.7 percent. Testing of turkey females increased by 45.8 percent.

The following summarizes the number of flocks and birds inspected and tested for pullorum disease:

FLOCKS AND FEMALES TESTED

CHICKENS

Year	Method of Testing	No. of Flocks		No. of Birds	
		Egg	Broiler	Egg	Broiler
1970	Whole Blood	123	187	90,067	224,114
1971	Whole Blood	103	175	79,706	204,598

AVERAGE SIZE OF FLOCKS

Year	Egg	Broiler	% Reaction
1970	732	1,198	0.00
1971	774	1,169	0.00

TURKEYS

Year	No. Flocks	No. Birds Tested	Average Size of Flocks
1969	11	32,230	2,930
1970	9	26,040	2,893
1971	15	37,976	2,532

*Estimate

Distribution of Breeds in Hatching Egg Supply Flocks Tested

Year	Bronze	Large Whites	Small Whites
1969	28.9%	43.7%	27.3%
1970	26.8%	45.2%	28.0%
1971	8.6%	53 %	38.4%

APPLIED RESEARCH PROGRAMS

A two year study on the economics of protein phase feeding of commercial egg layers was completed at the provincial poultry plant. The final report on this study will be released shortly. A flock was maintained for a force molting study, and a study on low erucic acid rapeseed meal was started at the end of the year. This latter study complements research undertaken at the University of Alberta in an attempt to obtain immediate data on optimum feeding levels.

A series of broiler density tests were conducted at the request of the Alberta Broiler Growers Marketing Board. The results of these tests have been tabulated and reported to the board and to industry. The flock of avian-encephalomyelitis free birds was maintained to facilitate embryology work at the O. S. Longman Building.

COST COMPARISONS

The branch continued to supervise the collection and tabulation of cost data for the various segments of the poultry industry. Continuous cost comparisons have been compiled and regularly published on chickens, broilers, commercial eggs, broiler and heavy turkeys, hatching eggs and pullet rearing. This data has proven vital not only to efficient management of individual operations, but to marketing boards having the authority to set producer prices.

ALBERTA POULTRY HEALTH PROGRAMS

These programs were further expanded in 1971. All turkey and chicken breeding flocks were enrolled in one or more phases of the programs.

Flocks were kept under surveillance through systematic monitoring procedures to provide the laboratory and flockowners with a continuous comprehensive health picture.

Ultimate goals are to reduce, and where possible, eradicate major disease problems affecting Alberta breeding flocks and to safeguard public health.

GENERAL

There were 1,149 farm calls and 536 allied trade calls made by members of the branch. In addition, there were 756 calls to surveys and studies, and 352 meetings attended.

The Poultry Commissioner attended the annual meetings of the Canadian Hatchery Federation and the Western Canada Egg & Poultry Association. He and members of the branch served on various committees.

The 21st Annual Poultry Industry Conference sponsored by the Alberta Poultry Hatchery Association, Veterinary Services Division and Poultry Branch was held in Calgary in November.

The 57th Annual Provincial Poultry Show was held in new facilities at Calgary in December. The Vermilion-Mannville Turkey Club disbanded this year after 21 years of continuous operation.

STAFF CHANGES

Retirement—Mr. Wm. Hutchison, Poultry Fieldman at Calgary, retired August 23, 1971, after 22 years of service.

Transfer—Mr. D. G. Lofthaug, Poultry Specialist from Fairview to Calgary.

REGULATORY SERVICES BRANCH

H. M. Link, Supervisor Livestock Regulatory Service

RECORDING OF BRANDS

Summary of Brand Registrations, Transfers, Renewals and Cancellations.

	Cattle	Horse	Sheep	Poultry	Fur Bearing	Total
New Brands Issued	2,097	178				2,275
Transfers	597	55				652
Certified Extracts Issued	5					5
Expired and Cancelled Brands	1,820	198	1	2	1	2,022
Brands Renewed	8,122	937	3			9,062
Brands Reissued	142	20				162

The Number of Brands in Good Standing at December 31, 1971

Cattle	36,129
Horses	3,811
Sheep	22
Total	39,962

There was a total of 3,945 letters written during the year, all related to work carried on in the brand office. One thousand nine hundred and twenty-three cattle and 217 horse final renewal notices were written and mailed in February of 1971. In addition to this, we wrote and mailed 8,466 cattle and 986 horse first renewal applications in August and September. Two thousand five hundred and fifty-five supplement sets were typed and mailed during the year.

ALBERTA LIVESTOCK AND LIVESTOCK PRODUCTS ACT

Stockyards and Stockyard Licensing

Licences were issued to 261 stockyards compared to 282 in 1970. Small "Class G" yards continued to close due to the operation of the Hog Marketing Board. Classes of yards were divided as follows:

B	C	D	E	F	G	TOTAL
19	26	63	3	3	147	261

A total of 58 Class D stockyards (Auction Markets) were in operation at the end of the year. Seven yards changed ownership; one yard ceased operations and two new yards were opened.

The following table shows the number of livestock sold at Class D stockyards during the years 1967 to 1971:

	1967	1968	1969	1970	1971
Cattle and Calves	604,411	663,676	704,766	742,220	840,865
Hogs	463,783	473,071	419,481	587,812	608,811
Sheep	33,665	28,383	25,567	18,180	37,347
Horses	9,989	10,729	10,060	8,687	10,374

Class E and F stockyards were operated at Pakowki, Park Bend, Walsh, Lea Park, Empress and Veteran. These yards handled 17,136 head of cattle compared to 13,430 in 1970.

Livestock Dealers and Livestock Dealers Agents

Claims were received against two livestock dealers' bonds.

Dealers and agents licensed totalled 854 compared to 852 for 1970.

THE LIVESTOCK BRAND INSPECTION ACT

This Act repealed and replaced The Stock Inspection Act which emphasized provisions to cover rail shipments. The new Act provides for a uniform manifest for horses and cattle in transit and prohibits such animals from leaving the province without inspection. It also provides for a standard document from which to start all brand inspection and a uniform procedure of inspection at all markets.

All brand inspection recording documents are redesigned to facilitate the coding of brands for computer input and provide for instantaneous electronic brand retrieval information.

A total of 2,305,512 head of cattle and horses were inspected through markets and on export. This is a slight increase of .07% over 1970.

Inspectors held up proceeds of sales or actual animals for a total of 9,847 for investigation of rightful ownership. The proceeds of sales covering 201 head were forwarded to branch headquarters for further investigation. Of the total held 75 head of live cattle and the proceeds from the sale of 934 head were returned to the rightful owner other than the shipper with 65 head, still under investigation at December 31.

Two hundred and thirty-six butcher's and hide dealer's licenses were issued, an increase of 19 from 1970.

Eleven branding demonstrations were conducted with approximately 500 people attending.

POUNDS

One new pound was organized under The Improvement Districts Stray Animals Act, bringing the total number of pounds in Improvement Districts to 163.

STAFF CHANGES

Brand inspector appointments: W. R. Aikins; J. W. Demchenko; L. Hauck; K. D. Stav and R. C. Thompson.

Resignation: E. Dunn.

Termination: K. Booth.

ECONOMICS DIVISION

ECONOMICS DIVISION

James W. Clarke, B.S., M.Sc., P.Ag., Director

ADMINISTRATION

ORGANIZATION

Initial organizational changes involved the setting up of a Field Services Branch, with a branch head located in Edmonton. The regional economists thus became representatives of all Economics Division programs within their regions, instead of reporting to any one branch.

Later in the year new emphasis was placed on the marketing of Alberta's agricultural products. This involved setting up an organization within the Department of Agriculture to support and advise on all aspects of marketing from the production and development level to the expansion of domestic and foreign markets.

The new organization has been planned to include:

Market Expansion—Export and Domestic Trade
New Foods and Quality Control
Commodity Marketing Support
Economic Support and Intelligence

AGRICULTURAL ECONOMICS RESEARCH COUNCIL OF CANADA

The director is the representative of the provinces of Alberta and British Columbia on the Board of Governors of the Agricultural Economics Research Council of Canada.

The director was requested to prepare a background paper on the Council to assist Agriculture Ministers and Deputies in making decisions about the Council's future. Two background papers were prepared and a summary was discussed at the meeting of Ministers and Deputy Ministers of Agriculture in Edmonton in July.

ECOLOGY CORPS

The Economics Division was successful in obtaining four summer students through the Imperial Oil-Provincial Government summer employment program. The students helped get underway programs that had been set aside because of lack of staff. The work accomplished was as follows:

1. A division library containing statistical and economic reference material was set up with help from the Provincial Librarian. The library will form the core of a proposed Department of Agriculture library.
2. A publication was issued containing a set of easy to use statistical analysis computer programs modified for use by the Department of Agriculture.

3. An Environmental Horticulture Study was initiated to determine the annual expenditure as well as the capital investment city dwellers incur regarding landscape cost and maintenance.

DEPARTMENT OF AGRICULTURE ANNUAL CONFERENCE

The director chaired the Departments' Annual Conference in September. The theme was "Policy Making and How Civil Servants Can Contribute". Our minister and other guests participated. Staff enjoyed the opportunity to become involved in discussion groups.

ECONOMIC STIMULATION PROGRAM

The federal government initiated a Special Employment Program to provide employment during the winter of 1971-72. The Economics Division was made responsible for the following "Economic Stimulation Programs" which, after the employment of sixty staff, are now underway.

1. Follow up of manpower training in farm management with selected livestock and grain farms in Alberta.
2. Survey of farm management information needs of native people in Alberta.
3. Survey of development possibilities of low income farms with recreational potential.
4. Evaluation of benefits of farm management programs in Alberta.
5. Strengthening agricultural statistical sources for development programs.
6. Feasibility study of the development of the sheep industry in Alberta.
7. Feasibility studies for lamb, poultry and milk processing plants.
8. Economic benefits of retraining programs for farmers in Alberta.
9. Collection of data for performance indicators for agricultural development.

MISCELLANEOUS

The director outlined Economics Division policy and programs at regional meetings held during the year. In addition, he presented papers at several conventions and conferences, and was an advisor to various committees.

ALBERTA FARM PURCHASE BOARD

K. G. Taylor, B.Sc., P.Ag., Chairman

In the reorganization of the Department of Agriculture, the Alberta Farm Purchase Board will be transferred to the family farm development division. The intention will be to consolidate and expand all Department of Agriculture credit facilities.

Farm Purchase Credit Act	1971	1970
Applications—Considered	145	180
—Approved	80	114
Value of Farm Land	$1,600,390.00	$1,950,858.50
Credit Approved	$1,115,883.30	$1,343,082.74
Number of Loans Paid Off	119	107

FARM MANAGEMENT BRANCH

B. A. Hackett, B.Sc., P.Ag., Head

CANFARM

During the latter part of 1971, the Alberta Department of Agriculture began to increase its emphasis on CANFARM. This resulted in the addition of eight farm management technicians in November and December, bringing the total technical support staff to 12. This decision also resulted in the training of almost all district agriculturists, some district home economists, some regional specialists, some Canada Manpower instructors, some Economic Stimulation Program staff and some staff from private firms. Training was at the introductory level and was carried out by the Farm Management Branch with resource support from CANFARM staff.

The result of the increased emphasis is an expected rise in the number of participants to the 750-900 level in 1972. This is an increase from 150 in 1971.

During the early part of 1971, CANFARM records were completed on 150 farms. The completion procedure and production of annual reports were not acceptable. These procedures have been reviewed by the Technical Advisory Committee and CANFARM staff and have been revised. The report format has also been improved. These improvements make CANFARM a much more acceptable product at the client level.

Also, during the year:

1. The branch head contributed to the development of CANFARM through active participation in the Technical Advisory Committee.
2. A proposal regarding the use of alphabetic codes has been offered to CANFARM after initiation by the regional economist in Vermilion.
3. Specifications for extraction of Farm Business Analysis data from CANFARM records have been completed.

FARM BUSINESS ANALYSIS

Processing of Farm Business Analysis records was reduced to an average of 3.10 days from receipt of the record to date of mailing. Two hundred and forty-seven records were processed to the end of June. A summary of the total farm section of these records is being prepared. Enterprise information is being utilized by the Production Economics Branch.

The Land Management Branch in Lethbridge, after a successful test run of the analysis, felt that Farm Management Branch's program provided them with more information than they were getting previously. They submitted 57 records for analysis during the year.

Thirty-three business analysis records were processed for the Quebec Department of Agriculture. The analysis included total farm, crop and cow-calf to finish enterprises.

A sample farm, intended as an exercise for instruction in the use of the farm business analysis program, was up-dated and printed for the benefit of department staff.

New transfer forms, to transfer information from the Alberta Farm Account Book for the farm business analysis, were printed.

FARM MANAGEMENT DATA MANUAL

Revision of the Farm Management Data Manual was considered a high priority item to meet extension needs. Existing materials from Alberta and from other provinces and states were reviewed; discussions on content and format were carried out; and gathering and assembling of data commenced.

The following work was accomplished by the end of the year:

(a) A new binder has been designed and printed.
(b) The animal industry section has been printed.
(c) The agricultural engineering section is complete.
(d) Data collection for the economics section is in progress.

TRADITION AND TRANSITION REPORT

The branch head assumed the responsibility for preparing the economics division's position paper on the Tradition and Transition Report. The submission was discussed at a Department seminar on the topic.

MISCELLANEOUS

The branch head prepared a report on farm management programs in Australia after his tour of that country last year. An interesting return of courtesy occurred when Mr. Ron McNeil, head of the Struan Agricultural Research Station in South Australia, visited Canada. Discussion on beef production, performance testing, forage research and farm management programs were arranged with the Department of Agriculture staff.

The branch head was actively involved on the Alberta Farm Management Co-ordinating Committee and the Rural Housing Committee.

Branch staff and regional staff were trained in the operation of the Oregon Farm Management Simulation Game which was used at Canada Manpower courses. Branch staff also appeared on T.V. programs about farm management and related topics.

FIELD SERVICES BRANCH

M. A. Cameron, B.Sc., P.Ag., Head

The Field Services Branch was set up early in the year with the appointment of a branch head. The purpose of this branch, consisting of the branch head and the six regional economists, is to improve communication between departmental staff and the Economics Division.

The branch head discussed implementation of the department's regionalization program, and the co-operation that could be given by the Economics Division, with regional directors and Extension Division. He assisted regional economists with planning in-service training sessions, with particular emphasis on farm management programs. There has been greatly increased interest and activity on CANFARM promotion and training, and also on involvement in Canada Manpower courses and in marketing courses.

Technical and extension economic publications were obtained and distributed to regional offices. The branch was placed on the mailing lists of several university and economics extension sources.

A meeting of all regional economists was held in Edmonton. They had a worthwhile visit with the University of Alberta's agricultural economists, and discussed areas of mutual concern with all branches of the economics division.

The Municipal Seed Cleaning Plant Association decided to use the standardized financial statements that the Field Services Branch assisted in developing.

There was a change of regional economists at the Lethbridge and Calgary offices. The permanent incumbent in Fairview spent about five months "on the farm". During his absence the temporary incumbent wrote a Forage Cost Study.

Several regional staff have attended supervisory development courses organized by the Central Personnel Office.

MARKETING AND STATISTICS BRANCH

T. S. Rackham, B.S.A., M.Sc., P.Ag., Head

The branch head was on leave of absence beginning in June to examine agricultural development in Ecuador.

PUBLICATIONS

Normal publications during the year included:

Alberta Farm Economist (5 issues)
Alberta Farm Market Analysis (12 issues)
Crop and Livestock Report (24 issues)
Agricultural Statistics (27 issues)
Statistics of Agriculture for Alberta 1969-1970

In addition, branch staff made several contributions to Farm Notes and Statistics Canada surveys, and were interviewed on several occasions for the FACT program on MEETA.

Branch staff were extensively involved in analyzing and reporting on various topics required for agricultural assessment and policy positions.

EXTENSION

Branch staff expanded their extension activities by participating at Canada Manpower courses on marketing, and presented specific outlook information at several farm meetings.

Conferences, meetings and seminars were attended by branch staff who made presentations at several of these.

RESEARCH

SYMAP—a computerized mapping program—was used to provide pictorial information about crop and rainfall patterns. The Canadian Wheat Board assisted by providing a computer tape for the project.

Other research activity included a hog slaughter forecast model and the Barley Growers Study.

PRODUCTION ECONOMICS BRANCH

J. G. Gorr, B.Sc., Head

PRIORITY EMPLOYMENT PROGRAM (PEP)

The branch head was appointed as agricultural member of the management group of the Priority Employment Program (PEP), and was responsible for co-ordination of PEP programs pertaining to agriculture.

The priority basis, federally related responsibilities and general duties were established. These were:

(a) employment intelligence
(b) regulations and procedures concerning incentives to agricultural fairs and exhibitions
(c) regulations concerning incentives to federal agricultural public works.

Work accomplished included preparing procedures and regulations; peparing a report on the employment situation in rural areas; preparing recommendations to cover proposed grants; answering requests for information; attending meetings to explain the program; and making recommendations on grants to agricultural societies.

DAIRY STUDY

During the year personal business analyses by computer printouts were sent to all participating dairymen on the dairy project. In December the dairy analysis was completed and separate reports were published for the milksheds of Edmonton, Calgary and Lethbridge. Personal reports were made to all participating farmers, and general reports were distributed to government and dairy industry. A meeting with the Milk Board chairman and the Alberta Dairy Association general manager was attended, at which the 1970 report was reviewed and the outlook of the dairy study was considered.

CONSENSUS RESEARCH DATA (CRD'S)

The Consensus Research Data method of obtaining cost of production information gained in popularity during the year. A simplified format was designed. Meetings were held with regional economists to discuss a uniform system. Workshops were held with some district staff to explain the CRD technique; which was also explained to mink farmers at a Canada Manpower course.

The following CRD's were processed during the year:

- Wheat on fallow (Calgary-Three Hills and Drumheller)
- Rapeseed on fallow (Calgary-Rockyford)
- Barley on fallow (Calgary-Standard)
- Fallow, Wheat, Barley rotation (Calgary)
- Hay production (undersown)—Loose (Red Deer)
- Hay production (undersown)—Baled (Red Deer)
- Oat/Barley silage production (Red Deer)
- Hay Production (Calgary)
- Barley Production (Calgary) (2)
- Silage Production (Calgary)
- Silage Production (Edmonton)

ENTERPRISE ANALYSIS REPORTS

The status of the annual Enterprise Analysis Reports was as follows:

- 1970 Beef Feeder Enterprise Analysis—Published
- 1970 Hog Enterprise Analysis—Ready for publication
- 1970 Cow-calf Enterprise Analysis—Published
- 1970 Crop Enterprise Analysis—Under Review
- Corn and Pea Study—Under Review

MISCELLANEOUS

During the year the branch was asked to review, comment on, or assist with various studies and reports which had been prepared by other divisions and organizations.

The branch head prepared several papers which were required for policy purposes.

Discussions were held with the Alberta Horticulture Research Centre, Brooks, and representatives of the flower growers about a proposed greenhouse study. Plans for the type of study and procedures were formulated. The Alberta Farm Account Book was modified for use in the study, which will commence in January 1972.

RESOURCE ECONOMICS. BRANCH

G. B. Parlby, B.Sc., Head

The branch's work is on a request basis. In 1971, requests for studies were received from the Water Resources Division of the Department of the Environment, the Lands Division and the Fish and Wildlife Division of the Department of Lands and Forests. As well, the branch head was appointed as agriculture's representative to the Land Use Assignment Committee. In addition to servicing specific reguests for economic information and consultation on resource use, the branch began compiling information on land, water, and fish and wildlife values from primary and secondary sources.

SASKATCHEWAN-NELSON BASIN

The branch participated in preparing suggested terms of references and costs estimates for determination of the demand for water for Agricultural and recreation uses at the request of Water Resources Division. These submissions became part of a task force submission to the Prairie Provinces Water Board. The task force was represented by the three prairie provinces and the federal government.

PADDLE RIVER AND SLAVE LAKE FLOOD DAMAGE ESTIMATES

Reports were prepared and forwarded to the Water Resources Division on the estimated damages sustained by farmers, county roads and others as a result of July floods in the Paddle River and Slave Lake areas.

GRAZING RESERVES

The Lands Division received an in-office cost analysis of the provincial grazing reserves.

COOKING-HASTINGS LAKE SUBMISSION

A submission was made at the request of the Environment Conservation Authority to the public hearings on the development of Cooking-Hastings Lake area. The submission commented on the study by Epic Consulting Limited and discussed the identification of project beneficiaries and consequent economic implications.

RANGE IMPROVEMENT REPORT

At the request of the Lands Division, a full review of the profitability of improving crown grazing leases was undertaken in the prairie, parkland and greywooded areas of the province. A report was prepared for extension purposes and was released in December.

FOOTHILLS RESOURCE ALLOCATION STUDY

The branch is preparing estimates of the economic activity and value of fish and wildlife resource as an input to this study being carried out by the Multiple Use Planning Section of the Alberta forest service.

VALUE OF WILDLIFE HUNTING AND SPORT FISHING RESOURCES IN ALBERTA

The branch co-operated with the University of Alberta and the Fish and Wildlife Division of the Department of Lands and Forests in preparing this report. The data will be useful wherever crown resource use decisions are being made and ecological costs require assessment.

STURGEON RIVER BASIN

A report on the demands for water in the Sturgeon River basin was forwarded to the Water Resources Division. An office evaluation of the flood damages on Riviere Que Barre and the Sturgeon basin was completed.

RURAL REAL ESTATE VALUE STUDY

A first year report on rural real estate values was prepared for the last six months of 1970. Assurance fund values obtained from the Department of Municipal Affairs have been recorded on computer tape for the year 1971. A report will follow at the end of March 1972.

FLOOD AND DRAINAGE DATA GATHERING PROGRAM

A continuous program to look into the benefits from the project and social costs of agricultural drainage has begun. Initially, the project costs and cost sharing arrangements are being looked at. It is intended that analysis of the ecological implications and the land use changes will be looked at as well.

LAND USE CONFLICTS BETWEEN PUBLIC HUNTING AND AGRICULTURE

In co-operation with the Fish and Wildlife Division, this work will provide an in-depth look at the problem between hunters and farmers. The area selected is the pothole country of the Beaver Hills moraine east and south of Edmonton. The study will identify problems, causes, their location and propose alternative solutions.

IRRIGATION

Some work has been initiated to collect economic information on the irrigation areas of Alberta for use in future resource use decision making.

MISCELLANEOUS

Other studies underway include two for the Lands Division, entitled "Sand and Gravel Dispositions" and "Crown Subdivision Dispositions".

The branch head assisted the Deputy Minister in the development of a submission to the Federal Minister of Agriculture by the Candian provinces and prepared several papers for policy purposes.

The branch acted in an administrative capacity and liaison capacity on the South Saskatchewan River Basin Study being conducted by the Department of Agricultural Economics at the University of Alberta.

SYSTEMS DESIGN AND DATA ANALYSIS BRANCH

R. T. Due, B.S.B.A., Head

COMPUTER PROGRAMS

Report of Production—Beef
Farm Business Analysis Report
Dairy Herd Improvement
Veterinary Information Retrieval System
Fur Trapping Analysis
Rural Real Estate Values
Cattle Brand Retrieval System

EDUCATION AND RESEARCH

SYMAP (Computer mapping program) and SPSS (Statistical Package for the Social Sciences) were adopted for use by various branches of the Economics Division and also by branches of other departments. A new three-dimensional plotting program (SYMVU) was received from Harvard University and modified for use at the Provincial Data Center. This program should allow the user to display his data in new ways for greater understanding and impact.

Meetings were held with Colleges Branch about educational costing computer application.

A systems design bulletin was issued concerning the use of linear programming.

A publication was written concerning a set of easy to use analysis programs which were written by IBM and modified by the branch. These programs make available to the Department the most sophisticated analysis tools.

The Alberta farm business analysis program was modified to automatically accept input from either the prairie provinces or Alberta farm account books.

A general program was written to produce mailing labels.

EXTENSION & COLLEGES DIVISION

EXTENSION AND COLLEGES

C. J. McAndrews, B.Sc., M.Ag., P.Ag., Director,
Extension and Colleges Division

GENERAL

Review and evaluation of the division in 1970 culminated in changes and clarification of objectives, structure and functions in 1971.

During the year, the objectives of the division were redefined to emphasize three implicit goals for extension programs.

1. The self-sufficiency of farm families and operators as managers, in all aspects of agricultural enterprises, was a primary objective of the division.
2. The promotion and maintenance of community and individual self-determination among rural people remained an integral part of extension activity.
3. Extension programs attempted to foster systematic education in agriculture and associated technical and business skills at the vocational level for both youths and adults.

The division's structure was realigned on January 1st, 1971, creating a minimum number of lines and levels of responsibility and authority. The administration of policy was retained at head office, but the responsibility for programs was delegated to the regional and college levels. Decision-making for program activities was delegated to the district level.

A number of specific structural changes accompanied the general alterations outlined above. The three branches of home economics, agricultural extension and agricultural engineering were dissolved and replaced by a single rural extension education team in each of the six regions. Head office personnel assigned to the former branches formed the nucleus of Program and Professional Services Secretariats which provided support in the form of technological and professional expertise to regional programs. With the elimination of the three branches, the transfer of program and staff responsibility to the regional directors and the transfer of program activities to the districts, the levels of responsibility were reduced from six to three. Policy administration remained a responsibility of head office, but the transfer of program administration to the regions and activity planning and implementation to the districts provided more latitude in operations. The lines of authority were reduced from three to one.

The colleges branch was retained as a branch and operated on a three level basis similar to that described above. Policy administration remained a head office function. Program administration was delegated to the principals of the three colleges and teaching responsibilities were delegated to the individual instructors. The colleges branch operated on this basis until the first of September when the entire branch was transferred to the department of advanced education.

The information branch remained untouched by reorganization and continued to discharge its duties from head office.

Despite significant structural changes, the basic function of the division remained intact. Extension personnel attempted to obtain from rural communities and individuals what they perceived as their needs and explored with them the opportunities for meeting those needs through the examination of possible alternatives. A systematic educational program designed to assist the group or individual was then planned and implemented within the framework of the department's policies. The success of extension personnel in realizing this goal is illustrated by the high percentage of rural people who made use of extension services. During the first six months of 1971, 30,000 farmers and 7,000 rural women engaged the services of district extension personnel. A Management Information System designed to accurately record information on clientele services was being devised at year's end. Information gathered by this system on client interests and problems, intensity of exposure to extension services and the amount of service provided by extension personnel will be instrumental in the creation of new programs and the analysis of old ones.

The presentation of educational services was diffused among the rural population according to a set procedure. To coincide with the program delivery system, planning originated at the grass-roots level. Specifically, the planning process concerned ultimately with the self-sufficiency and self-determination of the rural population considered the following:

1. SITUATION:
   The local scene is assessed in light of such external forces as provincial, national and international markets, policies, postures, etc. This develops an awareness of the situation. Consequently, activities that are feasible and those that are impractical are obvious.
2. NEEDS:
   The needs of local people are idenified and defined in relation to the existing situation.
3. GOALS:
   The end results which can be achieved are then readily clarified and related to possible courses of action.
4. TECHNIQUES:
   Alternative courses of action are related to new ideas, strategies and performance standards. The strengths and weaknesses of the resources available to achive the end results are related to expected activities.
5. PLANNING:
   Choices from feasible courses of actions are made and the detailed steps in the activities are described.
6. IMPLEMENTATION:
   The resources are activated and a plan is put into action.
   Implementation followed the pattern set out below:

Conditioning:

The client becomes motivated and develops a receptive attitude to new and relevant information. Motivation may be promoted by organizing people and programs, by offering incentives, or through direct contact and counselling. This is a recruiting process.

Awareness:

Communication activities such as farm meetings, fact sheets, radio, T.V., bulletins, short courses, advertising and promotion develop an awareness for the options or alternate courses of action available to farm operators.

While the client understands a comprehensive set of options, he may still lack understanding of the facts in sufficient depth to accurately analyze and evaluate the options. At this stage, it may be difficult to make competent decisions in applying the appropriate option.

Yet the client may well be stimulated to actively respond to his needs by applying some of the options learned.

Counselling:

Direct contact exposes the client to the technique of systematically organizing information and subjecting it to analysis and synthesis.

Counselling should only give direction. If applied in isolation to other processes, the danger of the counselor making decisions for the client may destroy the merit of the service.

Peer Group Interaction:

As a client increases his acquaintance with his peers, he becomes increasingly free in his discussion and exchange of thoughts. This sharpens his developing capability to make decisions.

In-Depth Training:

Extended exposures to facts and techniques in detail are necessary to arm a client fully for making competent decisions. Peer group inter-action can occur at the same time and is greatly accelerated if training is offered in a residential setting. The residential setting is suggested for advanced training programs.

Examination of Alternatives:

As the capacity to interpret and evaluate information develops and as the facts are known, the client can complete his synthesis of options and resolve decisions.

Decision Making:

Once the client has developed a capability for making sound decisions, he initiates his own search for relevant information. He makes his decisions relatively quickly and with a great amount of independence. He becomes self-sufficient in decision making. But, he remains a client because he will have a continual need for updated and new information.

Referral:

Not all of a farm operator's needs are resolved by a single agency. Extension personnel must therefore be knowledgeable of the functions of other agencies so that appropriate referrals can be recommended.

PROFESSIONAL SERVICES SECRETARIAT

STAFF DEVELOPMENT

L. W. Rasmusson, B.S.A., M.Ed., P.Ag., Associate Director, Extension

During 1971, extensive efforts were made to meet staff development priority training needs. Extension personnel were encouraged to re-assess and identify these training needs for both immediate and long term effectiveness. Since the emphasis and thrusts of departmental and district programs have changed considerably, increased importance was attached to decision making, management, marketing, agricultural policy, leadership, family life education and resource development.

Inventories of opportunities for staff development were compiled and increased support was provided to permit staff to keep abreast of technological developments and to develop a modern delivery system tuned to district needs and opportunities. Staff competence is of course essential for a continued high level of performance.

In addition to work assignments of an educational nature and new staff training, a variety of staff development activities were undertaken. Fifteen personnel from the Division took educational leave exceeding 30 days. Six of these were from the colleges branch. Six were members of the extension field staff. Three regional directors attended the Banff School of Advanced Management. Forty-two activities, including tours, short courses, seminars, etc., of 30 work days or less, selected to meet expressed training needs, were attended by 109 personnel. Thirty-four of these were members of the colleges staff and seventy-five from the extension branches. Four of the latter took graduate credit courses of 2-4 weeks duration. Several regional workshops relating to the study of the Tradition and Transition report and Canfarm training were also held.

MASTER FARM FAMILY PROGRAM

Five families received the award in 1971. These were:

The Herman Linder Family of Cardston
The Roy J. Graham Family of Olds
The Ellwood Thompson Family of Innisfail
The Laurence Teasdale Family of Paradise Valley
The Arthur Pahal Family of Nisku

There were 30 district nominations of which 21 entered the regional judging.

LEADERSHIP DEVELOPMENT

During 1971, the professional services of the leadership office were employed by numerous governmental and non-governmental agencies to develop among their members an awareness of the intricacies of group dynamics and to foster leadership and communication skills. Requests for instruction and information came from community organizations, Department of Agriculture personnel, personnel of other departments, Agricultural Advisory Committees, participants of Manpower courses and university extension courses as far north as Fort Vermilion and as far south as Foremost.

Extension leadership information was disseminated to interested individuals and groups in two distinct ways:

a) **Teaching or Direct Instruction:**
Basic principles and techniques in group dynamics, leadership and communication, decision-making and organizational development were normally presented in this manner. The increased demand for direct instruction in the above areas was reflected in the amount of time allocated to teaching activities; 40% in 1971 as contrasted to 21% in 1970.

b) **Consultation:**
Frequently, the leadership specialist operated as a consultant for departmental staff, staff of other government agencies, representatives of volunteer organizations and R.E.D.A. staff. Advice was offered on such subjects as in-service training designs, personal development courses, Agricultural Advisory Committee functions and inter-personal communication skills. To insure that participants received maximum benefit from group dynamics seminars and leadership workshops, 25% of the leadership specialist's time was allocated to preparation and planning. Several teaching projects required extensive individual preparation. Wherever possible, project

schedules were designed with local committees to maximize participation and educational benefit.

In addition to course presentation, 25% of time was allocated to:

a) The evaluation of courses and training sessions;
b) reporting correspondence and visual aid preparations;
c) conferences and public relation functions;
d) management functions and budget preparations;
e) professional development.

HOME ECONOMICS SPECIALISTS AND LABORATORY

V. G. Macdonald (Mrs.), B.Sc., Head, Home Economics,
Professional Services Secretariat

The head and 4 specialists in food, nutrition and marketing, clothing and textiles, home management and consumer affairs and home design performed a dual function relating to extension and to laboratory services.

I General Extension Goals: (A) Support the extension "action level" in carrying out educational programs, by conducting staff training courses and keeping staff informed as to results of research, current information and possible trends. (a) Assist District Home Economists (D.H.E.'s) with program suggestions, adapted to district needs, or develop special projects to meet a special group or district need. (b) Develop teaching aids and information. (c) Participate as resource specialist in district, regional and provincial courses and programs.

(B) Participate and encourage co-ordination of home economics extension services with programs of other departments of government, social agencies, industry, etc.

(C) Inform staff and assist families in developing skills in the application of scientific and economic principles, and in the arts to everyday living. Teach families to seek and evaluate information as a basis for sound decision-making.

(D) Community responsibilities—provide information, increase understanding, at provincial and national level, regarding government policy, regulations, etc. and assume liaison role. Increase knowledge and effective use of community services; encourage participation in urgent community concerns.

(E) Keep abreast of current and research information and adapt to practical needs of homemakers.

(F) Plan and assist in training of volunteers and instructor-aides.

II Laboratory Goals: (A) Co-operate with commodity groups, food processors, marketing boards and commissions in the testing and further use of agricultural products and to develop appropriate services according to needs of each.

(B) Liaison to bridge the gap between processor and consumer.

(C) Test and evaluate products, equipment, techniques, etc. under simulated home conditions to provide unbiased consumer information about foods, nutrition, clothing, textiles, housing and home management.

(D) Use laboratory facilities—to prepare illustrative teaching materials and factual, tested information for field staff and other government services and public. Also to host promotion activities of Alberta agricultural products for buying missions, etc.

(E) Deal with specific concerns of public, staff, department divisions, etc.

Primary consumers of services are: (a) "Action level" extension staff-district home economists and regional specialists. (b) Alberta families—mainly young middle income but increasing emphasis placed on low income, native and welfare. (c) Other departments of government, provincial organizations and social agencies, commodity groups, food industries and marketing chain regarding consumer goods. (d) Urban homemakers and organizations who learn of our services.

Examples of activities performed related to goals:
(A) At the request of the D.H.Ec's, 87 courses and demonstrations were conducted in rural areas. In addition 32 presentations were made by direct request of agencies and groups such as regional teachers' conventions, provincial and professional organizations and government services. Topics such as "Is This Where You Can Save?", "Home Design for Low Income", "Laws Affecting Families", "Record Keeping", "Buying Children's Clothing", 'Problem Eaters", "Family Food Fare", "Food Handling in Small Institutions", "Marketing Boards, Commissions and the Consumer", "Losing to Win", etc. were covered.

(B) Staff and other professionals were informed of pertinent research and other current topics by 39 fact sheets and 23 newsletters prepared by the specialists. Many of these were used by daily newspapers, the "Country Guide" and agriculture papers. Six new publications, 6 revised publications and 15 new rural house plans were prepared and published.

(C) Response from 30 T.V. presentations (2/3 taped for use of other stations) was excellent, but created difficulty in meeting individual requests for specific information.

Specialists and the head responded to 8,417 phone calls from staff and public for information and answered 3,015 letters requesting information. Plans for 86 new rural homes and 44 remodelled homes were drafted.

(D) Teaching aids for use of staff were developed, e.g. 4 kits of illustrative materials, 8 sets of slides to accompany lecture outlines, 10 program and lecture outlines, etc.

(E) **Staff training** involved sessions for new staff—3 regional sessions (for 5 regions) and a D.H.Ec. Conference.

(F) **Co-operation with other departments and agencies** involved 383 organized meetings and activities e.g. prepared public assistance scales for food and clothing, E.M.O. lectures and exercises re: emergency feeding, municipal dental survey evaluation of diets and testing low carbohydrate recipes, supervised communications projects for 11 U. of A. students and initiated meetings with department of indian affairs re: supervision of training indian instructor-aides and work with Indian women. Other co-operative activities were: Selections Committee for U. of A. home ec. faculty, the government study team on rural housing and the Alberta Board of Consumers' Association of Canada, etc. There were 2 Alberta women's weeks planned and supervised at the Olds and Fairview Colleges and several home economics displays designed and developed at the request of other agencies for special events.

Laboratory Services involved:
(A) Two Alberta demonstration and display luncheons for Japanese Food Missions and a test luncheon for a proposed Alberta food promotion in Japan in co-operation with federal and provincial trade and industry.

(B) Co-operation with food processors and commodity groups, etc., e.g. Hog Marketing Board, Poultry Products, Potato and Vegetable Growers, Western Cattlemen Association, Alta. Honey Processors and Beekeepers, Rapeseed Oil Processors, Dairy Products, Frozen Egg Melange, etc. Tests on storage times, quality and development of recipes (220 recipe tests) were made.

Six color food photographs were made for publication in bulletins and national advertisements, e.g. Chatelaine Magazine.

(C) Co-operation with other laboratories, e.g. Crop Clinic, Toxicology, Dairy, etc. by testing samples.

(D) 20 textile tests (fabrics, carpet samples, etc.) for institutions, staff and the public.

(E) Design and preparation of 7 displays.

(F) Conducting 10 group tours in the laboratory and helping 229 individual visitors mainly interested in design of home storage space, interior finishing materials and equipment features.

NAMES OF HOMES PROGRAM

Number of homes registered in 1971,	57
Total registrations for the province,	953

PROGRAM SECRETARIAT

C. A. Cheshire, B.Sc., P.Ag., Head, Agricultural Extension, Program Secretariat

During the past year, the program secretariat, composed of Mona Cox, J. L. Reid, and C. A. Cheshire, was primarily concerned with staff recruitment, the improvement of staff working relationships, program responsibilities and general liaison with other divisions, agencies, and agricultural organizations.

Recruitment was carried out on a continuing basis throughout the year for trained district agriculturists, assistant district agriculturists and summer assistant district agriculturists. Staff induction periods, on-the-job training and a one week seminar with new staff facilitated the rapid adjustment of new extension personnel to their duties in the field.

In 1971, the program secretariat was extensively involved in the establishment of management development courses (C.M.C.) assisting in the formulation of course content, course schedules and program presentation. The secretariat also co-operated with R.E.D.A. for the presentation of the farm machinery co-operative courses.

Within the department, the secretariat worked directly with the individual regions, defining the parameters of policy, assisting personnel with the execution of programs, advising personnel located in the districts and examining priorities at regional meetings.

It is suspected that forthcoming changes in the department in general and the division in particular will substantially alter the present role of the program secretariat.

AGRICULTURAL ENGINEERING

J. L. Reid, B.Sc., B.S.A., M.Sc., P.Ag., Head, Agricultural Engineering Extension, Program Secretariat

Regionalization was formalized during the early part of 1971, and although the agricultural engineering activities followed a pattern similar to previous years, more emphasis was placed on regional needs. This change in administration resulted in all regional agricultural engineering activities being reported on a regional basis.

During the year, instruction and participation intensified in provincial programs such as the rural welding clinics, evening welding schools, machinery maintenance schools and progressive farming days. In addition, a new vocational building school was introduced as a pilot project.

The administration of the Farm Implement Act was transferred from the Plant Industry Division to the agricultural engineering branch. Activity in the animal waste disposal and odour control area expanded to include extensive co-operation with the Departments of Environment and Health in order to solve pollution problems in the agricultural field. Regional agricultural engineers have initiated a number of applied research projects in an attempt to solve some local and provincial problems. A preliminary stream survey was carried out by three regional agricultural engineers to determine if animal wastes were responsible for stream pollution.

The past year saw increased participation by the branch at the national level. The branch provided a significant contribution to the Barber Report on Farm Machinery, nation farm building plans and national policies on agricultural engineering programs and research.

URBAN HOME ECONOMICS

The extension home economist with the Alberta Department of Agriculture has traditionally provided services designed to enhance family living. In the main these programs have been directed toward a rural population. In recent years, however, the social conditions of the urban environment have changed with such rapidity that cities now require services parallel to those offered to the rural population. The demand for information pertaining to new food products, nutrition, weight reduction programs, domestic budget control, credit and a host of other areas is mushrooming out of proportion to the time and personnel available to meet the need.

At present, extension has only one home economist working in a metropolitan area. This home economist is attached to a community service centre in north Edmonton and interfaces with departments of the municipal government and private social agencies. To date, the urban home economics program has provided assistance to agencies concerned with home help programs, community development, youth programs, family counselling, daycare and recreation. In addition to providing expertise to other organizations, the program has fostered the establishment of several developmental programs in homemaking and promoted the dissemination of diversified consumer information to a large number of individuals and groups throughout the greater Edmonton area.

During the past year, the presentation of the urban home economics programs established inroads into the social fabric of the city. Programs involved the co-operation of such organizations as the University of Alberta, the Norwood Readiness Centre, the Debtor's Assistance Board, the Edmonton Housing Authority, senior citizens groups, Consumer Credit Counselling Services, Community Leagues, various Edmonton retailers and hospitals, schools and churches. Where possible, programs were presented through existing structures. Courses were offered at various schools training girls to work as volunteers in day-care and child care centers. Seminars were presented at the University of Alberta and were instrumental in the placement of students in community programs. Instruction sessions on nutrition and recreation will be offered at Strathcona Place—Senior Citizens Social Service and Recreation Centre in the coming year. Programs executed in the above fashion can be completed at relatively low cost and conducted in an amenable social environment.

Major efforts were made in 1971 to convey information to the public through the media. **Consumer Corner** was a regular monthly feature on television. For five weeks throughout the year, an open line show designed to satisfy questions on food processing and consumer buying was conducted, and from time to time tapes dealing with a variety of subjects were made at local radio stations.

At present, plans are being made to expand the urban home economics program. Proposed expansion will facilitate the wide scale promotion of Alberta agricultural products and in general explain the functions of the department to the urban population. In addition, the ready applicability of extension techniques to the urban setting in such areas as community development, nutrition and household management for urban residents in general and especially for senior citizens and low income groups will complement the efforts of present agencies and provide a provincial presence in metropolitan areas.

RURAL EXTENSION EDUCATION IN THE REGIONS AND DISTRICTS

Region 1—Lethbridge

J. G. Calpas, B.Sc., M.Ed., P.Ag., Regional Director

Economic prosperity in the region varies greatly depending on the type of crop or livestock operation marketed by the farmer. During 1971, crop yields ranged from average to slightly above average for most districts in the region. Substantial acreage increases were experienced in barley, wheat and rapeseed production. In addition, a record sugar beet crop was harvested in the region despite a heavy infestation of beet webworm. The region appears to be moving closer to tapping the commercial potential of such crops as field corn, alfalfa, irrigated rapeseed and fresh vegetables. Cow-herds expanded with stable prices: swine operations maintained stable levels of production: and sheep producers appeared to develop more marketing and organizational awareness. Policy measures are still required to ensure adequate profits and levels of production in the above operations. A shortage of credit and investors for cow-calf herds has restricted expansion of the cattle industry. Potential exists in crop diversification, but is restricted due to lack of capital. Flexible credit arrangements are required. The potato market situation is critical at present and policy must be devised to create stability.

In 1971, regional programs were highlighted by the following:

(a) Seven of the ten districts adopted warble control measures. With the remaining districts indicating support for these measures, the entire region is expected to be under warble control by 1973.

(b) Interest has increased among farmers for Farm Economics Training Programs. 500 farmers attended C.M.C. farm management courses, 350 attended special marketing courses and close to 150 attended special records management courses.

(c) There are signs of revitalization among advisory committees. Lethbridge, Vulcan, Pincher Creek and Forty Mile all experienced increased participation.

(d) Activities of district home economists were well received in 1971. A total of 352 people attended courses on foods and nutrition. About 1400 attended 130 sessions on sewing techniques, clothing and textiles. Home management courses were attended by 387 women. Publications (10,905) were distributed throughout the region providing residents with information and staff with support for programs.

Region 2—Calgary

H. M. Douglas, B.Sc., P.Ag., Regional Director

In 1971, the primary objective of the region involved the promotion of management and marketing skills. Programs designed to meet these needs included:

(a) New commercial crops, vegetables and small fruit products were promoted. Several C.R.D.'s were conducted to assess the feasibility of such crops.
(b) Several in-depth courses were staged on livestock breeding and feed handling. Record of Performance (R.O.P.) programs recorded large attendances.
(c) Some 420 farmers were exposed to the educational marketing series. This program was supported by Canfarm and C.M.C. courses.
(d) Attempts were made to form advisory committees in two districts.
(e) The results of research projects in such areas as new technology for livestock operations, fertility and soil erosion information were disseminated to farmers. Assistance was also provided in the selective use of herbicides.

During the past year special attention was given to family living and consumer education programs. Four series of courses were conducted on family living with a total attendance of 366 people. However, outstanding commitments in other home economics programs prevented expansion of the program. Consumer education programs were well received in the region in 1971. Some 4,700 persons attended 42 sessions on foods and nutrition. Buymanship, special diets, freezing and cooking methods were principal interest areas. Courses dealing with sewing, clothing, and textiles experienced a substantial increase in 1971, with 15,717 persons attending 89 sessions. Sewing clinics also showed increased demand.

Region 4—Red Deer

R. D. Price, B.Sc., P.Ag., Regional Director

Most of region 4 experienced below average production during 1971. Hail, drought, and pests reduced crop yields well below the year norm. Total crop damage caused by hail, particularly in the counties of Red Deer, Lacombe and Stettler, is estimated at $10 million. The quality of grain harvested in the region was adversely affected by severe drought. A sudden infestation of Beet webworm and Bertha armyworm in August caused extensive damage to rapeseed crops especially in the Sedgewick and Red Deer areas. Despite prompt control measures, yields were reduced and production costs for this crop increased.

Livestock prices showed considerable fluctuation in 1971. In many districts hog prices did not meet costs. Feedlot profits were reduced by high feeder cattle prices. On the other hand, cow-calf producers benefited despite an outbreak of I.B.R. in many parts of the region. In addition, dairy and sheep production has experienced substantial expansion with stable prices.

During 1971, regional personnel emphasized farm business and production management, marketing, consumer education, family living and leadership development. At least 50% of the staff's time was allocated to structuring activities in these areas to meet the district needs. Activities ranged from schools on beef production, machinery and dairy production, to courses on sewing and fabric selection, nutrition and consumer buying, home design, and money management.

Efforts of regional personnel were supplemented by several special and intergovernmental programs:

(a) Special programs were established on the Hobbema and Sunchild Reserves.

(b) The Canada Manpower program was expanded from six to ten courses. These courses complemented the management assistance provided by extension staff and were particularly well received by developing farmers.

(c) A comprehensive program on quality pork dealing in consumer likes and dislikes was being carried on at year's end in co-operation with the Lacombe Research Station. Some 210 families are involved in this program.

(d) In the past year, emphasis was placed on Farm Business Analysis (F.B.A.), Canfarm and Concensus Research Data (C.R'D..s).. With the co-operation of Canada Manpower program instructors, courses in Canfarm engendered considerable interest in the districts.

(e) To adequately resolve the increased number of problems regarding waste disposal and pollution, liaison was maintained with the departments of health and environment.

It is interesting to note that while farm calls declined in 1971, total farmer contacts increased. Much of the increase can be attributed to major increases in attendance at group meetings. Under present conditions this trend may be beneficial since the development of overall management skills appears to be a more important factor than specific production oriented problems.

Region 5—Vermilion

J. S. Duncan, B.Sc., P.Ag., Regional Director

During 1971, the region pursued a number of specific objectives.

Farm operators were assisted in developing adequate management skills. Meetings and in-depth courses on management such as Canfarm and Farm Business Analysis attracted 1500 farmers. As a results of these efforts, requests for market outlook information increased and many farmers acquired a better understanding of their business.

Producers were encouraged to adopt new practices such as cross-breeding, new feeding programs and R.O.P. During the year programs on management, breeding, feeding and marketing were presented to farmers through the use of demonstrations and tours. Topics discussed ranged from the availability of assistance in selecting breeding stock to veterinary services. Increases in beef production, stability in hog production, increased interest in livestock feeding and knowledgeable participation in warble control are indicative of the success in this area.

In the area of crops and soils, extension personnel concentrated on promoting crop production to suit soil and climatic conditions. Where possible, the principle of comparative advantage was stressed in crop diversification. Well over 3,000 farm operators attended demonstrations and meetings dealing with feed and soil testing, improved fertilizer practices and the results of research projects on crop and soil practices. These programs resulted in increased rapeseed and barley production, increased interest in new technology and methods, and improved cropping practices.

Extension agricultural engineers attempted to provide farm operators with up-to-date information on machinery, surface erosion problems, storage methods and animal waste pollution control. Tours and demonstrations explaining new facilities and equipment, in-depth machinery and welding schools combined with numerous 'Silage Daze' forage production were instrumental in Engineering information to the rural population.

During the past year, district home economists initiated several programs for farm families. A total of 6,500 people attended courses on family nutrition. Some 1,500 attended meetings and courses dealing with sewing techniques. Courses on interior design and decorating were also provided throughout the region. In addition to the above programs, home economists were deeply involved in consumer education programs. Consumer education displays, exhibits and courses, as well as planned correspondence courses and the mass media, were used to promote domestic financial management and to create an awareness of consumer legislation.

Region 6—Edmonton

H. J. Fulcher, B.Sc., P.Ag., Regional Director

During 1971, the quantity and quality of field crops showed slight improvement as acreage increased and adequate storage facilities became more prevalent throughout the region. The beef industry expanded with more herds on R.O.P. and increased experimentation with cross-breeding programs. More than 1,000 inquiries were made during the year regarding R.O.P. Swine and sheep operations remained at 1970 levels.

Extension activities aimed at increasing and improving field crops and livestock operations appear to be successful. More than 1,100 farmers obtained information on the maintenance of soil fertility through the use of commercial fertilizers and crop rotations. The warble control program is operating throughout the entire region. The use and acceptance of farm management tools such as records, C.M.C. courses and C.R.D.'s increased in 1971. Some 454 farm operators took part in agricultural marketing meetings and courses while Farm Business Analysis attracted 282 farmers. The 1,488 inquiries regarding building plans indicated a substantial expansion in farm construction.

District home economists experienced increased inquiries on housing, family nutrition, family life and home management. Requests for information on home furnishings, design and remodelling illustrate the growing need for additional services in this area. Evidence of a need for specialized services in family life led to the appointment of a family living specialist in 1971. More than 500 requests for information and assistance were received.

Region 7—Fairview

W. L. McNary, B.Sc., P.Ag., Regional Director

Region 7, encompassing much of northern Alberta, is still in many ways a developing region. A sparce population scattered throughout the region makes the dissemination of information on extension services difficult. For this reason alone one would expect progress to be slow. Increased efforts are required in many areas. If rapeseed acreage is maintained or increased, the need for information on the most profitable rotations of rape, cereals and fallow must be met. Cultivation techniques, the use of new land and the relationship between the type of crop, soil type and geography must be explored. In many areas, the lack of veterinary services is a severe handicap. Recognition of the merit of farm management records must be promoted. These are but a few of the problems which will have to be overcome in the future.

Despite the difficulties presented above, a number of major programs were initiated in 1971:

(a) A.D.A. staff co-operated with interested producers in establishing the Peace River lamb project. Extension personnel provided considerable management guidance to producers and organized special tours and management field days for interested farmers.

(b) A comprehensive study of forage processing in the Peace was completed this summer. At least two districts had hay shed financial assistance projects in 1971.

(c) Training courses providing basic information on livestock production were instituted. A total of 265 farmers participated.

(d) Intensive study group sessions on rapeseed production were carried on in the Peace River district.

(e) Ten-week agricultural upgrading courses and a variety of C.M.C. courses constituted a major breakthrough in the area of management development.

(f) At Grande Prairie the family life education committee began to expand. After several months of preparation, public meetings were held and future plans for an additional series were finalized.

(g) In general, the nutrition series carried out on reserves were well attended. The series created an awareness of the importance of proper nutrition but it may be too early to identify concrete changes in attitude.

INFORMATION BRANCH

W. W. Wismer, B.S.A., M.S., Head, Information Branch

The chief responsibility of the branch has been to convey to producers, agri-business and homemakers relevant information on government agricultural policy and to explain the role of extension programs in the fields of agricultural promotion and marketing.

During 1971, these general duties were complemented by a number of specific projects:

(a) Market promotion of Alberta agricultural products received increased emphasis through consumer information releases on radio and television and in brochures and displays. Numerous government branches and individual producer groups profited from the assistance offered to their commodity promotion campaigns.

(b) Guidelines for the co-operative production of publications, radio programs and television features were established at two meetings held at the federal-provincial level. During the year a new format for agricultural fact sheets was established employing the Agdex filing system. In addition, the terms of reference for the establishment of a central departmental library were devised. A daily television program was produced and aired on five stations throughout the province in co-operation with the Metropolitan Edmonton Education Television Association. During the year, the demand for printing services rose by 13% with a similar increase in central duplicating.

W. W. Wismer, Branch Head for the past eight years became director of information for the Department of the Environment and C. C. McMurchy transferred to the program development division.

ART AND GRAPHIC SERVICES:

One hundred and fifty design and production items were completed during the year.

Art and graphic services also assisted the Alberta Egg and Fowl Marketing Board with their spring egg promotion by designing the entry form and providing counsel on promotional procedures in conjunction with the board's advertising agency.

Twelve issues of the television calendar for FACT were published with a distribution of 18,000 copies.

A pamphlet and handbook on Environmental Quality in Alberta was designed for the Alberta Institute of Agrologists. Similar design work was provided for the Alberta Turkey and Poultry Marketing Boards for distribution at the Calgary and Edmonton Exhibitions. The products promotion trailer was again prepared by the art and graphic services for use in the Calgary Stampede parade and the Lethbridge Fair.

Assistance was provided to regional staff in the preparation of graphic materials.

PRESS SECTION:

The information branch released 280 articles in its weekly publication "Agri-News" (formerly "Farm Notes") during the year. The articles dealt with a wide variety of subjects in all areas of agriculture. Many concerned market outlook information, livestock diseases, pesticides, engineering topics and general crop and livestock production. Others dealt with federal and provincial policies and programs. These included such topics as the Alberta government's position on Bill C-176, Alberta's proposed Milk Market Sharing Program, the effect of the proposed new federal tax legislation on basic herds, the federal-provincial agricultural manpower agreement and Prairie Grains Income Stabilization Act. Articles also included the CANFARM system of farm management and an interpretation of all the agricultural acts passed at the last session of the Alberta Legislature.

The weekly publication, "Science and the Land" was discontinued. In its place the Branch published 86 fact sheets as research information became available. Called "Agri-Science", the fact sheets presented applied scientific information in a condensed form for the professional agrologist and research worker.

In addition, 96 press releases were prepared relating to staff appointments, promotions, departmental projects and government policy. Promotional releases were provided on Alberta's Master Farm Families, Alberta Women's Week, the Design for Living exhibit at the Klondike exposition, and a Japanese brochure on Alberta agriculture.

Five home economic fact sheets were produced and nine publications were edited upon request.

PRODUCTS PROMOTION:

The majority of commitments were in radio and television. One program a week on "Farm and City Today" was devoted to buying and using Alberta products. Radio features on CBC and commercial stations throughout the province were commodity promotion oriented.

The products promotion officer assisted with poultry promotion at the Calgary Stampede and Edmonton Exhibition. Other activities included: lamb promotion at Fairview College; judging at the Salad Queen contest and Edmonton region Honey Queen contest; "Gardening is Groovy" display at the Calgary Stampede; co-hosted Japanese Trade Mission; participated and assisted in organization of the Gourmet Meat Show in conjunction with the Edmonton fall sale; attended B.C. Honey Producers' Convention.

Programs were prepared with home economists of the Poultry Products

Institute, Dairy Food Service Bureau, Canada Department of Agriculture, B.C. Extension Department, Federal Fisheries and the Egg and Fowl Marketing Board.

Radio		Television	
CBC	— 246 programs	"Family Focus" (FACT)	— 104 programs
Other	— 255 programs	"Market Place"	— 31 segments

PUBLICATIONS:

Ninety-eight new publications were produced during the last calendar year, with twelve more in various stages of progress. This was an increase of 57% over last year's introduction of new Alberta Department of Agriculture publications. The publication center distributed over 1,300 different publications to the general public. Over 250 new publications were introduced for general distribution from other sources. eg. C.D.A., University of Alberta, University of Saskatchewan and commercial agencies.

Distribution of publications:

	Number	Requests
(a) Agriculture Section	488,617	18,250
(b) Home Economics Section	197,707	16,072
(c) Building Plans	11,220	
TOTAL	697,544	34,322

Central Duplicating and Supplies:

Service within the duplicating center increased by 13% during 1971 with 5,213,803 sheets printed. The addressograph section expanded rapidly, maintaining up-to-date mailing lists for all branches within the department. There was an increase of 31% in the amount of envelopes run for the department. The collating center, which operated for 10 months, processed 2,175,742 sheets of paper.

Visual Aids Center:

A central pool of audio visual equipment was maintained for department personnel. It included PA systems, movie projectors, overhead projectors, cameras and tape recorders. Six hundred and fifty requests were handled during 1971. A large percent of this equipment was used for Manpower courses in Alberta.

RADIO PRODUCTION:

During 1971, "Call of the Land", the Alberta Department of Agriculture's 10-minute Monday to Friday farm broadcast was aired 261 times on eleven Alberta radio stations. The following stations carried the broadcast throughout the year: CKUA Edmonton, CFCW Camrose, CJDV Drumheller, CKRD Red Deer, CJOI Wetaskiwin, CKYL Peace River, CFGP Grande Prairie, CJYR Edson-Jasper, CHEC Lethbridge, CHAT Medicine Hat and CKSA Lloydminster.

The Bureau of Broadcast Measurements survey provided an approximate assessment of listener response to "Call of the Land". The report indicated 113,000 persons listened to the program once or more per week. The program was broadcast by all stations during the noontime period.

"Call of the Land" was used extensively to promote and publicize the services of the Alberta Department of Agriculture. Current information was provided on both federal and provincial farm policy. As in previous years, extensive use was made of personality interviews to provide closer association between research and extension personnel and the agricultural producers of the province.

All segments of the agricultural industry were covered with the major emphasis on livestock production and farm economics. In keeping with the increasing emphasis on the marketing of Alberta's agricultural products, marketing information received more priority than in the past. Most of the information was directed to the individual farm operator; however, many programs contained items of interest to urban listeners. Agricultural extension courses were widely publicized.

For the 14th consecutive year interviews and daily Alberta results were carried from the Royal Agricultural Winter Fair in Toronto. In addition, night press reports on Albertans' activities at the Royal were provided for Alberta daily newspapers.

"Call of the Land" was produced, recorded, and distributed from the studios of the information branch. A total of 5,634 "Call of the Land" broadcasts had been released as of December 31, 1971.

TELEVISION

"Farm and City Today" (FACT):

"Farm and City Today", a 15-minute television program, was produced by the Alberta Department of Agriculture in co-operation with the Metropolitan Edmonton Educational Television Association (MEETA). The program consists of a 10-minute segment dealing with horticulture on Mondays, consumers on Tuesdays and Thursdays, and agriculture on Wednesdays and Fridays. Channell 11, Edmonton, also has a 5-minute livestock market report following the 10-minute feature.

During the year, "Farm and City Today" was carried by TV stations in Alberta and B.C. on a regular basis.

CFAC-TV Calgary	8:20 a.m.	CJDC-TV Dawson Creek, B.C.	2:30 p.m.
CJOC-TV Lethbridge	8:45 a.m.	CHAT-TV Medicine Hat (since discontinued)	2:30 p.m.
CKSA-TV Lloydminster	1:30 p.m. & 11:30 p.m.		

Viewing audiences were difficult to determine but Calgary, Lloydminster and Dawson Creek indicated a total of 57,000 viewers per day.

In 1971, 261 "Farm and City Today" programs were aired on the five commercial stations as well as MEETA.

Agriculture:

Of the 105 agriculture inserts produced, approximately 20 per cent dealt with marketing, 20 per cent animal science, and 20 per cent with field crops. The 5-minute daily livestock report featured market quotations Monday through Thursday. On Friday the quotations were replaced by local and national market information, reports from the United States and current agriculture news of interest.

Information, including sound on film interviews for the agriculture segments, was obtained from the three CDA research stations in Alberta as well as agriculture leaders, farmers and federal and provincial government personnel.

"Leisure is Fun Time", a series of televised programs hosted by staff from Olds and Vermilion Colleges, was again produced in co-operation with MEETA. "Horsemanship for Kids" and "Landscape Design" were included in the series. One of the original series, "Simple Automotives" was expanded by MEETA to become the first televised credit course in the province. Past programs in these series have been well received and were re-run during the summer months.

The information branch of the Alberta Department of Agriculture is the only agricultural information source in Canada providing daily radio and television programming.

AGRICULTURAL AND VOCATIONAL COLLEGES BRANCH

J. E. Hawker, B.Sc., B.A., P.Ag., Associate Director (Colleges)

After 58 years of operation, in September of 1971, the administration of the Agricultural and Vocational Colleges at Olds, Vermilion and Fairview was transferred from the Department of Agriculture to the newly established Department of Advanced Education.

Commenting on the transfer, Dr. R. E. Rees, Deputy Minister of Advanced Education, stated that he saw no major changes in the philosophy, purpose, personnel or structure of the colleges. Any structural changes that may occur as a result of the move will be determined at cabinet level.

Enrollment in regular courses at both Olds and Fairview was lower by fifty students. Vermilion showed an increase of thirty. Registration in continuing education (short courses, up-grading, etc.) showed a very substantial increase at all three colleges. Interest in agricultural programs is presently low, reflecting the general malaise of the industry. This was particularly noticeable at Fairview.

Public use of the facilities at all three colleges continued at a very high level. A total of 32,284 individuals were served through seminars, conferences and meetings during the year at the three colleges.

Applied research at the colleges continued to expand. Interest in the sheep at Fairview remained very active and beef feeding trials involving the use of formic acid treated silage were extended to include Fairview as well as Vermilion and Olds.

CONTINUING (ADULT) EDUCATION

As evening programs, short courses or correspondence lessons, continuing education is being expanded at all three colleges. So far only a modest beginning has been made. Guidelines are being developed and it is anticipated that further terms of reference will be established shortly.

In an effort to have an officer through whom information could be channelled and some problems resolved, the government appointed Dr. Brian Staples as Co-ordinator of continuing education for the province. He is attached to the new Department of Advanced Education.

Liaison of the Colleges with Other Post-Secondary Institutions and the University of Alberta (Faculty of Agriculture)

A. **Between the Colleges** (at Olds, Vermilion and Fairview)

Generally speaking, courses (subjects) taken at one college are recognized by the other two colleges. However, if a student transferred into a different program, emphasis might be different and some course adjustment necessary.

B. University of Calgary

Three adult evening courses on horses and horse care are offered by the continuing education division of the University of Calgary. There is close co-operation between the University and Olds College with respect to those courses.

C. Liaison between the Agricultural Colleges and Public Colleges

(a) **Lethbridge Community College**

- i. Offers a diploma program in general agriculture consisting of four 12-week sessions over two years. The program is similar to those offered at the agricultural colleges, but does not lead to an agricultural technology diploma or to specialized diplomas without further study at one of the agricultural colleges.
- ii. Irrigation Technology—Course was offered for the first time in the fall of 1970, but was not started for lack of sufficient applications. Information on the Olds program was supplied to Lethbridge College.

(b) **Mount Royal Junior College** — Calgary — Two Farm Management courses were offered in 1970-71. An Agri-business course was offered but was not successful.

(c) **Grande Prairie Junior College** — There is no formal agreement but informally Grande Prairie College has indicated they do not plan to offer agricultural courses. Liaison between Grande Prairie and Fairview College is excellent.

D. Between the Agricultural Colleges and Other Agencies

A co-operative program, through which farm management and specialty courses for farmers are offered throughout the province, involves the extension and colleges division and the program development division of the Alberta Department of Agriculture, the vocational training division of the Alberta Department of Education and Canada Manpower. Courses operate at least five hours a day, five days a week for periods varying from two to twelve weeks.

NEW PROGRAMS

1. An Agricultural Production Technology Advisory Committee was established for Olds College. The committee consists of farmers who advise on production agriculture and is a new committee for a well-established program.
2. Business Administration Technology programs, made available at Olds and Vermilion, were designed to prepare men and women for employment in business and industry.
3. Timber Construction Technology was designed to train foremen for home construction projects, prefabrication and mobile home plants.
4. Grounds and Building Maintenance Training Schools consisted of correspondence lessons and three two-day practical schools at Vermilion College.
5. Farm Management Short Courses (Canada Manpower) were designed to give established farmers the necessary background knowledge in the various areas of farm operation to enable them to make realistic management decisions on their own farms. Offered at Olds, Vermilion and Fairview.

REVISED PROGRAMS

1. Fashion and Design Merchandising Technology was revised from a 36 week program to 64 weeks and the name changed to Fashion Merchandising Technology.
2. Land Resources Technology was revised to include emphasis on management of forestry and wildlife. The name was changed to Renewable Resources Technology.

3. Agricultural Automation Technology—name changed to Systems Engineering Technology.
4. Agricultural Chemicals Technology—name changed to Pesticide and Chemical Technology.

PROPOSED PROGRAMS

Dairy Correspondence Course
Floriculture Course

BOARD OF AGRICULTURAL EDUCATION

The board will continue to function under the Department of Agriculture, advise the Minister of Agriculture and through him, make recommendations to the Department of Advanced Education all aspects of agricultural education in Alberta.

During 1971 significant matters examined by the board included:

1. Articulation between the college courses and courses offered in the faculty of agriculture, University of Alberta was studied by a committee set up by the board and a measure of concurrence was found. As a result graduates of a college may now receive credit for up to six half courses in agriculture in the faculty.
2. Another committee developed guidelines for a policy with respect to continuing education. Incomplete at the time of transfer of the colleges from the Department of Agriculture, this matter will now have to be cleared through the Department of Advanced Education.
3. After careful consideration and much discussion the board approved the principle of granting liquor licenses on agricultural college campuses effective September 1st, 1971, subject to the existing law of the province of Alberta. Subsequently this recommendation was approved by the Minister of Advanced Education.
4. On a rotational basis it was agreed that representatives from other institutions in Alberta engaged in teaching agriculture would be invited to report to the board on their agricultural programs. It was also recommended that an official representative from A.I.A. should be a member of the board.
5. The board accepted the responsibility of acting as liaison agent between the Department of Agriculture and agricultural education in Alberta, with specific reference to the agricultural colleges, through the Alberta Agricultural Co-ordinating Committee (A.A.C.C.).
6. The present Agricultural and Vocational Colleges Act will be changed to reflect the transfer of the colleges from Agriculture to Advanced Education after the release of the Worth Commission Report expected by mid-year 1972.
7. The board agreed that the Deputy Minister of Advanced Education, the Director of Agricultural Colleges, the agricultural college principals and the educational co-ordinator should continue to sit on the board as ex-officio members.

FINANCIAL ASSISTANCE TO STUDENTS

Limited student assistance was available from Canada Manpower because of length of most programs and cost per student day. Some students received help from Alberta vocational training funds with a few being assisted by funds from A.R.D.A., Department of Indian Affairs and Department of Social Development. A large number of private organizations and some individuals were generous in their support through the provision of bursaries and scholarships. These are detailed in the college calendars.

Substantial assistance was also again available in the form of loans from the Queen Elizabeth Fund. From September 1st, 1971 to January 4th, 1972 the following assistance was granted:

	Students Assisted	Total Loans
Olds	103	$ 90,430.00
Vermilion	49	$ 44,225.00
Fairview	18	$ 15,620.00
TOTAL	170	$150,275.00

USE OF COLLEGE FACILITIES FOR OTHER THAN REGULAR PROGRAMS

At each college the facilities were used by many organizations serving regional, and often provincial, needs. These groups included government agencies, farm organizations, commercial firms, conventions, conferences, sports events, advisory committee meetings and summer programs for 4-H clubs and others. Attendance at these functions is recorded as Person/Days, i.e.: if 10 people attended a function lasting three days, the attendance would be recorded at 30 Person/Days. For the period January 1st to November 30, 1971, attendance for these various functions at colleges was: (comparable 1970 figures are shown in brackets).

	Number of Events		Person/Days	
	1971	(1970)	1971	(1970)
Olds	211	(211)	30,866	(17,696)
Vermilion	152	(339)	12,620	(15,700)
Fairview	168	(157)	6,987	(9,126)
	531	(707)	50,473	(42,522)

CONSTRUCTION IN 1971

There was no major construction undertaken at Olds or Vermilion. Very extensive landscaping was carried out on all three campuses.

A new hog barn was constructed at Fairview replacing the unit which had to be demolished to make way for the heating plant the year previous.

APPRECIATION

A large number of farm and other organizations as well as commercial firms and individuals rendered excellent support to the work of the colleges. Unique and valuable service was given by people serving on the various Program Advisory Committees and the Board of Agricultural Education. Valuable assistance was given to students through the contribution of scholarships, bursaries and prizes. To the many who have assisted in so many ways, the department is sincerely grateful.

Counselling and help from other branches and divisions of the department, other departments of government, the Alberta universities, the Colleges Commission and public colleges is gratefully acknowledged.

The excellent co-operation between the three agricultural colleges and with the central office is very much appreciated.

COLLEGE ENROLMENT—WINTER, SPRING AND FALL SESSIONS—1971

	Olds			Vermilion			Fairview		
	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall
Total	370	574	587	246	466	329	238	117	183

PLANT INDUSTRY DIVISION

PLANT INDUSTRY DIVISION

O. G. Bratvold, B.Sc., P.Ag., Director

Crop production was about average for Alberta farmers in 1971, somewhat down from 1970 but about equal to the previous five year average.

The northern half of the province experienced above normal precipitation early in the season. This caused some delay in seeding as well as flooding of hay and pasture crops along the Paddle River north of Sangudo, the Swan River at Kinuso and the Heart and East Prairie Rivers at High Prairie.

Dry conditions prevailed in southern Alberta during June and July. This was followed by hot dry conditions throughout most of the province and resulted in some crops deteriorating. Many reports of poorly filled crops and light samples, particularly of barley, were received.

Rapeseed acreage increased substantially, A major outbreak of beet webworm and Bertha armyworm occurred in central Alberta. Assistance to farmers who sprayed was provided. These are reported in more detail under the headings "Pest Control Branch" and "Field Crops Branch".

Two severe hail storms swept through central Alberta causing damage in excess of 10 million dollars.

Good harvesting weather was experienced throughout the province and provided virtually all farmers the opportunity to complete harvesting by the end of October.

ALBERTA HAIL AND CROP INSURANCE CORPORATION CROP INSURANCE PROGRAM

In 1971 Crop Insurance protection was offered in the same areas and, with the exception of flax and canning beans, on the same crops as in 1970. Coverage on contract acreage of canning beans was added on the same basis as the canning pea program. Flax was insured for the first time in 1971 on the basis of $2.00 per bushel. Coverage on all other insured crops remained unchanged, i.e., wheat—$1.25; barley--$0.65; oats—$0.45; and rapeseed—$1.50 per bushel.

In 1971 a beginning was made on a coverage adjustment program whereby eventually the coverage of every contract holder will be adjusted in accordance with his loss experience under the program.

The actual experience of the Crop Insurance Program for 1971 and for each year since the inception of the program in Alberta in 1965 is included in the following table:

	Insured Farmers	Acres Insured	Premium Paid by Farmers	Risk Carried	Indemnities Paid
1965	1,312	250,010	$ 232,000	$ 3,139,000	$ 48,000
1966	4,408	984,784	$ 802,000	$13,460,000	$ 315,000
1967	9,892	2,271,143	$1,934,000	$38,021,000	$1,267,000
1968	15,661	3,904,894	$3,769,000	$63,718,000	$5,496,000
1969	16,115	3,556,751	$3,117,000	$56,878,000	$6,286,000
1970	12,791	2,304,075	$2,087,923	$31,801,000	$1,600,000
1971	11,236	2,425,651	$2,176,143	$33,151,000	$2,400,000*

*Estimated

There were 83 processing pea and bean policyholders covering 2,882 acres.

A separate Annual Report of the Corporation was tabled in the Legislature during the 1971 session.

November Estimate of Field Crops Production published by Statistics Canada was as follows:

Crop	Area		Yield per Acre		Production	
	1970	1971	1970	1971	1970	1971
	—acres—		—bushels—		—bushels—	
Wheat	2,600,000	3,500,000	27.7	26.3	72,000,000	92,000,000
Oats for Grain	2,050,000	1,850,000	57.1	51.9	117,000,000	96,000,000
Barley	4,700,000	6,100,000	42.1	39.3	198,000,000	240,000,000
Rye	215,000	225,000	22.1	23.3	4,750,000	5,240,000
Flaxseed	700,000	400,000	16.3	13.0	11,400,000	5,200,000
Rapeseed	1,450,000	2,100,000	17.6	16.2	25,500,000	34,000,000
Mixed Grains	450,000	450,000	46.7	42.9	21,000,000	19,300,000
			—cwt—		—cwt—	
Potatoes	32,000	30,000	178.1	153.3	5,700,000	4,600,000
			—tons—		—tons—	
Sugar Beets	36,733	42,093	14.25	16.23	523,502	683,000
Tame Hay	3,400,000	3,600,000	1.82	1.69	6,200,000	6,100,000

Major expansion of land and physical facilities were undertaken at the Alberta Horticultural Research Center, Brooks. This was in line with the need to develop specialty crop production commensurate with market opportunities. Representation was made to the Energy Conservation Board opposing the construction of a natural gas—sulphur disposal plant within close proximity of the Research Center. As a consequence the construction site was moved to a remote area, thus reducing the potential danger to plant material from sulphur dioxide poisoning.

CROP PROTECTION AND PEST CONTROL BRANCH

J. B. Gurba, B.Sc., P.Ag., Head

LIVESTOCK INSECTS

Cattle Grubs and Lice

The use of systemic insecticide as a spray or pour-on treatment in the fall continued as an established practice for warble grub and louse control in beef cattle, whereas rotenone was used on milking dairy cattle. Promotion of large area control on a municipal basis was continued with 37 municipalities in the province actively organized as warble control areas. Financial assistance was provided under the Area Warble Control Assistance Policy, administered by the Livestock Branch. Technical and regulatory assistance was provided by this Branch.

Agricultural Service Boards provided sprayers for demonstration or service spraying and supervised treatment in control areas. In several districts systematics were provided at reduced cost to promote initial treatment with costs shared under the A.S.B. Agreement. An estimated 2.5 million head of cattle were treated for grubs and lice in the province. Field evaluations were conducted in cooperation with the Lethbridge Research Station and showed that warble numbers were considerably reduced. Publication 653-6 Warble Control was widely distributed along with Publication 651 Control of Livestock Insects. Publication 651-1 Dairy Pesticides was revised and distributed.

CROP INSECTS

Grasshoppers

The grasshopper infestation continued at a low level in southern Alberta but increased over 1970. Of the 2.66 million acres in the infested area, 2.30 million were rated as "light" and 0.36 were rated as "moderate". The dominant species was the two-striped grasshopper with the migratory and clear-winged species more numerous in some cases.

The accompanying map shows the approximate areas and degrees of infestation. The egg hatch was mostly completed by June with little movement into crops until late summer, when some chemical control was necessary.

Under the grasshopper policy the department distributed dimethoate insecticide at cost, less handling and shipping charges, through municipal and district offices. Dimethoate was recommended for use on infested crops and pasture. Checks by provincial and municipal workers showed that farmers generally used the chemical properly. Each purchaser of insecticide was required to sign a declaration that emphasized correct use and placed the responsibility for misuse on the applicator.

The grasshopper policy, and forecast maps were supplied to municipal and district offices and other interested agencies. Information on control was distributed through Publication 622-4-1 Grasshopper Control in Alberta. Publication 622-9 Control of Field Crop Insects—1971 was revised for updated information on grasshoppers and other major crop pests. The Branch cooperated with municipalities and the Lethbridge Research Station in surveys of grasshopper numbers. The data indicates a considerable increase in infestation for 1972.

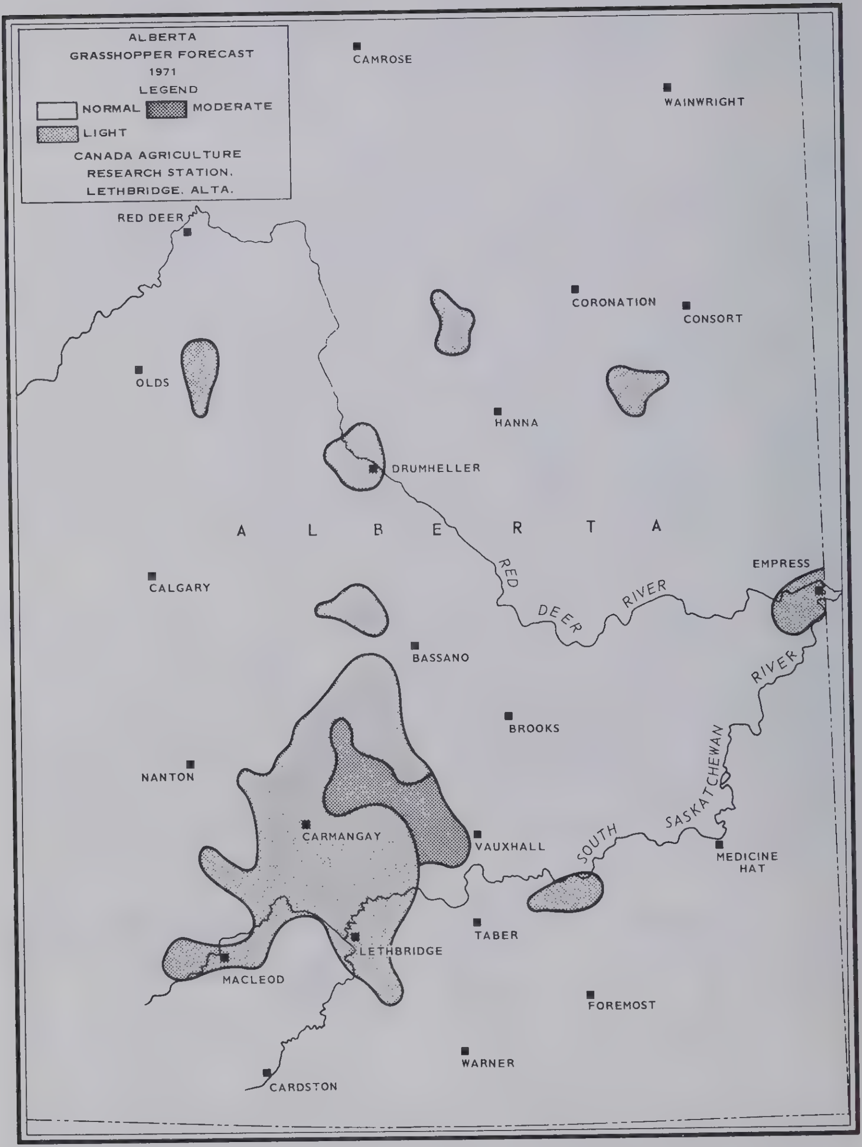
The following table compares the 1971 grasshopper situation with that of 1968-70:

	1968	1969	1970	1971
Acres Land Infested	5,700,000	4,700,000	1,088,000	2,656,000
Acres Crop Menaced	800,000	700,000	200,000	400,000
Acres Crop Destroyed	500	200	90	200
Lb. Dimethoate Used	3,404	1,408	288	856
Acres Sprayed	18,000	7,400	1,482	4,560

(Grasshopper Map)

Cutworms

The pale western cutworm caused some economic damage in widely scattered areas in southern Alberta. The red-backed cutworm occurred in various parts of the parkland north of Calgary but damage was light in most areas. Rural gardens were most seriously affected. Endrin was used as an effective control measure for field crops. The 1971 cutworm forecast, prepared by federal research stations, was mimeographed and supplied to municipal and district offices.


ALBERTA
GRASSHOPPER FORECAST
1971
LEGEND
NORMAL
MODERATE
LIGHT
CANADA AGRICULTURE
RESEARCH STATION,
LETHBRIDGE, ALTA.
CAMROSE
WAINWRIGHT
RED DEER
CORONATION
CONSORT
OLDS
HANNA
DRUMHELLER
ALBERTA
RED DEER RIVER
EMPRESS
CALGARY
BASSANO
BROOKS
NANTON
CARMANGAY
VAUXHALL
SOUTH SASKATCHEWAN RIVER
MEDICINE HAT
TABER
LETHBRIDGE
MACLEOD
FOREMOST
WARNER
CARDSTON

Wireworms

Wireworms were found throughout the province. Considerable damage was reported in cereals due to lower use of seed treatment compounds because of environmental concern. Some damage occurred in potato and other root crops. Municipal seed cleaning plants treated 559,000 bushels of seed with insecticide or about 3% of total seed cleaned (2% in 1970).

Other Cereal Crop Insects

Wheat stem sawfly damage was generally light to moderate with an increase in number of fields damaged. Resistant wheat varieties, Cypress or Rescue, were recommended for sawfly infested areas. Aphids continued to infest some cereal crops. Dimethoate or malathion sprays were recommended for control of grain-infested aphids.

Forage Insects

The sweet clover weevil caused some damage in local areas in the central part of the province. The pea aphid was found in large numbers in some alfalfa fields in southern Alberta. Dimethoate spray was used to control a few economic infestations. Some heavy infestations of alfalfa weevil were reported in alfalfa fields in southern areas. The only control recommended was early cutting to reduce the population on succeeding crops.

Vegetable and Special Crop Insects

The alfalfa looper was found in some rape fields in the Three Hills-Claresholm area but not in economic numbers. The Branch cooperated with the Saskatoon Research Station in testing control measures for various rapeseed insect pests.

The beet webworm affected 35,000 acres of sugar beets in the south and 50,000 acres of rape in the Three Hills-Sedgewick area. Northeast Calgary was also invaded by these worms from adjacent rape crops. All infestations were adequately controlled with Dylox or Lannate insecticides applied by aircraft on rape crops and by ground sprayers in Calgary.

Flea beetles damaged rape and mustard seedlings in most areas. DDT and guthion spraying of seedling stands gave adequate control. DDT supplies were scarce as restriction on its use was continued. Diamond back moth larvae were found in some rape fields but chemical control was not necessary. Root maggots continued as a pest of cabbage, turnip, onion, carrot, and sugar beet crops in various parts of the province. Colorado potato beetles were common and most potato fields were treated with an insecticide.

Bertha Armyworm Outbreak

The Bertha armyworm, a climbing cutworm, was the most destructive insect pest of crops on the prairies. It affected various crops and about 500,000 acres of rape in Alberta were infested in the parkland region. About twenty municipalities were involved in the main outbreak area of east-central Alberta bounded by Edmonton-Red Deer-Wainwright-Bonnyville. The armyworm had occurred in past years in scattered infestations. More serious problems had been predicted with rapidly expanding rape acreage. However forecasting had not developed sufficiently to accurately indicate which pest, where and how severe.

No chemical control was registered at the time of the outbreak in early August although several insecticides had been field-tested. Lannate (methomyl) was promptly given provisional federal registration and provided excellent control. Since Canadian supplies were scarce, emergency operations commenced by airfreighting two plane loads from the manufacturer in Texas.

About 56,000 pounds were purchased and 41,100 pounds used, costing $9.00 per pound or $2.00 per acre. The chemical was consigned at cost to municipalities where mixing crews, aircraft and spraying schedules were organized by agricultural fieldmen, who were trained and licensed pesticide applicators.

All necessary federal, provincial and municipal staff cooperated in the emergency by training farmers and operators in the proper handling and use of the toxic, but short-lived insecticide. About 250,000 acres of rape crop were sprayed within two weeks by 27 Canadian and 21 U.S. aircraft. Except for occasional fields treated late, total damage was low, six people were briefly hospitalized, no apparent damage occurred in wildlife or the environment, and no lannate residue were detected in the harvested rapeseed.

The outbreak consisted of a complex of Bertha armyworm, several other climbing cutworms and other similar worms which were difficult to identify and to provide control recommendations. Cooperative research projects were begun with federal agencies to handle future problems. Farmers were assisted with about one-half of the cost of chemical used to protect rape crops from armyworm and beet webworm damage.

Shelterbelt Insects

A few persistent populations of forest tent caterpillars remained in the parkland region as patchy infestations. Pear slugs damaged cottoneaster, plum and mountain ash, while the lilac leaf miner caused unsightly damage on ornamental lilacs in urban areas. Common insecticides and dimethoate used for these two pests gave effective control.

Spruce in shelterbelts or as ornamental plants sustained moderate defoliation by the yellow-headed spruce sawfly in agricultural and urban areas of central and northern Alberta. Aphids were common on shade trees and ornamentals but were adequately controlled by using malathion or dimethoate. The poplar bud gall mite remained a problem on hybrid poplar in southern Alberta with pruning the only effective method of control.

Carpenter ants and wood borers were troublesome in urban and resort areas. Spruce spider mites were reported on shelterbelts and ornamentals throughout Alberta. Identification and control were provided through the Plant Industry Laboratory as well as Canadian Forestry Service.

The department's 50% grant for purchasing insectide sprayers was used by the following municipalities: I.D. 16 Valleyview, I.D. 18 Lac La Biche, Counties of Beaver, Stettler and Lethbridge, to provide a total of 42 special sprayers for service work.

Other Insect Pests

Numerous problems occurred from stored grain pests such as grain mites, rusty and saw-toothed grain beetles. Information was supplied to farmers on stored grain problems. Deodorized malathion was recommended for stored grain treatment instead of the more hazardous fumigants.

Household insects, plus an increased number of insects of public health importance, including flies, head and body lice, were dealt with by the laboratory as well as the supervisor's office. With restriction of DDT, control measures were difficult to obtain. The strawberry root weevil continued to invade homes but did not cause any economic damage. Sod webworms and earthworms infested lawns in most urban areas.

The grey garden slug inquiries continued as numerous as in recent years. Metaldehyde was recommended but did not give satisfactory control therefore other methods of control were tested. Numerous minor insect pests of crops and gardens were identified in the laboratory as well as in the supervisor's office and control information was supplied as requested.

CROP DISEASES

Diseases on Potatoes

1. Bacterial Ring Rot

A joint provincial-municipal program to control bacterial ring rot was carried out in the counties of Newell, Lethbridge, Forty Mile, M.D. of Taber and I.D.'s 1 and 2. The control program in the Edmonton and Calgary areas was carried out by Division staff.

Branch personnel and some municipal inspectors conducted the disease surveys. Early maturing varieties were inspected in early August and late varieties in late August and early September. When bacterial ring rot was found municipal fieldmen helped growers eradicate it from their farms. Grants were paid to municipalities on the basis of acreage under permit and number of growers. Diagnosis of tubers suspected of having bacterial ring rot was conducted by the Plant Industry Laboratory in Edmonton and by a special technician at Lethbridge. A Summary of the incidence of bacterial ring rot is presented in the accompanying table.

BACTERIAL RING ROT OF POTATOES IN 1971 AND A SUMMARY FOR 1967-71

Pest Area	No. Farms Inspected	No. Farms Infected	Acreage Inspected	Acreage Infected	% Infected	
					Farms	Acreage
Perimeter	23	0	325	0	0.0	0.0
Edmonton	59	4	4,951	60	6.8	1.2
Lethbridge	27	2	1,735	24	7.4	1.4
I.D. 1 & 2	5	1	205	6	20.0	2.9
Calgary	17	1	271	10	5.9	3.7
Taber M.D.	53	12	9,705	1,167	22.6	12.0
Newell	49	6	5,097	680	12.2	13.3
Forty Mile	13	6	1,860	1,238	46.2	66.6
Total 1971	246	32	24,149	3,185	13.0	13.2
1970	259	54	26,605	5,638	20.8	21.1
1969	240	24	21,256	1,815	10.0	8.5
1968	255	33	18,622	2,030	12.9	10.9
1967	242	39	15,810	2,633	16.1	16.7
5 yr. average	248	36	21,288	3,060.	14.6	14.1

Acreage infected with bacterial ring rot was significantly less than in 1970 and was just below the 5-year average. Of 24,149 acres of potatoes inspected on 246 farms, 13.2% of the acreage, involving 32 of the farms, was infected with bacterial ring rot. Although the incidence of bacterial ring rot was generally low it varied widely among the potato growing areas. The disease was not found in the Perimeter area of southern Alberta, whereas it affected two thirds of the acreage in the County of Forty Mile, The County of Newell and the M.D. of Taber experienced a moderate amount of bacterial ring rot. The M.D. of Taber significantly reduced its infected acreage from last year.

Potato acreage under permit decreased from 26,605 acres in 1970 to 24,149 acres in 1971. The reduction in acreage occurred in southern Alberta and particularly in the M.D. of Taber.

2. Other Potato Diseases

Blackleg was severe in southern Alberta. Rhizoctonia was widespread but infections were light. Early blight and late blight caused some damage in the Edmonton area.

3. Seed Potato Improvement Program

The Seed Potato Improvement Program was continued at Peers on the H. Acorn farm to provide basic disease-tested stocks for elite growers. Norland, Kennebec, Red Pontiac and Caribou varieties were grown as Elite II. Two acres of potatoes were planted and 30 tons were harvested. New mother stocks of Norland, Warba, Norgold Russet, Viking, Sebago, Kennebec, Red Pontiac, Norchief and Netted Gem were obtained from the Vancouver Research Station and 9,000 lbs. of Elite I seed were produced on one half acre. An advisory committee provided liaison and coordination of all provincial, university, federal and grower agencies involved. The Botanist, Plant Industry Laboratory, served as the coordinator for the various aspects of the program.

Disease Highlights

Snow mold disease caused considerable damage to turf in the Edmonton area and to turf and perennial herbs in the Peace River area. Heavy precipitation during late spring and early summer caused foliage diseases of crops to become unusually severe in central and northern Alberta. Scald and, to a lesser extent, net blotch was severe on barley. White rust and black spot were particularly severe on rape. Flax was affected by pasmo on the Research Station at Beaverlodge and by stembreak throughout Alberta. Eye spot was severe on creeping red fescue and black stem was severe on alfalfa in the Peace River area.

Root rot was severe on barley and rape. The number of plants with moderate to severe root rot in different fields of barley and rape in the Peace River area averaged 21.5 and 33% respectively. Fireblight was common on apple and mountain ash. Bacterial blights affected beans. Peas suffered primarily from root rot. A special survey was conducted for rapeseed diseases. Some 800 representative samples were collected from across the province in cooperation with regional supervisors. Laboratory diagnosis was carried out to define serious pathogens as part of a cooperative research program with university and federal agencies.

Fungicide Seed Treatment

In cooperation with chemical companies, the testing of new promising seed treatment fungicides was carried out at the University Parkland Farm, at the Beaverlodge Research Station and at Vermilion College. A total of 18 chemicals were tested on 5 different crops in the continuing attempt to develop effective replacements for mercury fungicides. Some of the formulations increased significantly the germination of wheat and controlled loose smut in barley. None of the formulations provided effective control of root rot on any crop.

Municipal seed cleaning plants treated with fungicides, primarily mercurial, 2,962,400 bushels of cereal seed compared to 2,905,800 bushels in 1970. This indicated a slow recovery from the adverse publicity surrounding mercury following the ban on hunting of game birds in 1969-70. Existing stocks of mercurial seed treatments were allowed for use during 1971-72. Farmers and handlers showed proper caution in the use of mercurials. There were two reports of careless dumping of treated seed with prompt action taken to dispose by burial.

ANIMAL PEST CONTROL

Norway Rat Control

Alberta was basically kept free of rats for the twentieth consecutive year, as a result of the continued extensive control program on the east border.

The increase in invading rats experienced in 1969 and 1970 subsided to a total of 57 infestations this year compared to 106 in 1970. All infestations were exterminated by the end of the year.

The following table summarizes activities and the year end rat situation over the past three years:

	Year	Vermilion Rv. County #24	Wainwright M.D. #61	Provost M.D. #52	Special Areas Nos. 2 & 3	Acadia M.D. #34	I.D.'s 1 & 2	I.D. #18	Totals
Premises Checked	1969	438	360	551	478	85	576	223	2,711
	1970	494	296	542	475	92	576	214	2,689
	1971	515	256	525	455	148	548	330	2,777
No. Infestations	1969	29	14	17	28	0	2	0	90
	1970	39	16	29	14	0	4	4	106
	1971	21	7	13	13	0	3	12	69
No. Infestations Remaining Dec. 31	1969	0	0	2	4	0	0	0	6
	1970	0	0	0	0	0	0	0	0
	1971	0	0	0	0	0	0	0	0

Generally good cooperation was experienced from residents, pest control officers, municipalities and other agencies. Rats were successfully held along the 380 mile front from Montana to Cold Lake. Farther within the province, some rats invaded through transport facilities and shipping. Many suspected cases were investigated and all live rats found were exterminated. Most of the reported sightings turned out to be harmless muskrats or native "pack" rats upon investigation.

The department increased the grant toward salaries and expenses of officers in six east border districts this year from 50 to 60 percent. Two provincial officers worked closely with municipal authorities, assisted with problem cases and conducted control work in northern improvement districts. Some 250 pest control officers appointed by rural and urban municipalities handled local problems.

The following quantities of anti-coagulant bait were used: Warfarin Ready Mixed—18,826 pounds and Water Bait—2,425 packages. Based on the amounts of poison used and average rat populations, an estimated 25,100 rats were killed. This represented a saving of approximately $1,000.00 in potential rat damage for each $1.00 spent on rat control. Although immunity to the bait has not been experienced here, as in other parts of the world, tests were initiated to evaluate potential alternatives.

Emphasis continued on public relations and education with full use being made of displays, demonstrations, in addition to the public media. Newly appointed officers were trained and supplied with information kits. Spring and fall "workshop" sessions were held to train staff in new techniques and policies.

Rabies Vector Control

In response to the threat of spread of rabies to the province, the Branch assumed responsibility for the control of rabies vectors (coyotes and skunks) in specific locations in agricultural areas. Coyote control programs were recommended within a radius of approximately 50 miles of Red Deer where rabies in coyotes was prevalent. For skunks, a buffer zone 18 miles wide adjacent to the Saskatchewan border was established and skunk depopulation was initiated within this narrow strip. All vector control programs were conducted in localized areas according to the need. The objective in each case was to reduce the density of known vectors within the foci of infection in order to reduce potential intra-species contact. As a result of artificially reducing vector populations more quickly than by disease, the period of infection of rabies, along with the danger of its spread to other animals and man, was lessened.

One intensive three-mile radial depopulation of skunks at Borradaile, Alberta, was conducted where the only confirmed rabid skunk was found. Three temporary field staff were employed to assist with the vector control programs. Financial assistance was received by a special rabies warrant to meet this emergency. During the year in the skunk control buffer zone, 6,545 square miles were covered and approximately 1,475 skunks were destroyed. Some investigative work involving bats was also initiated. Several publications were prepared and distributed to municipal staff, pest control officers, fish and wildlife officers and others concerning various techniques, principles, and policies relative to rabies vector control. The program was coordinated with operations of the Fish and Wildlife Division.

Pocket Gophers

Pocket gopher damage to hay crops was about average. About half of the rural municipalities had mechanical bait applicators available for farmers to use in large area infestations. Three thousand pounds of 0.2% gophacide bait was distributed to six municipalities on a trial basis. The effectiveness of coordination of applications in a large acreage control was evaluated in the County of Mountain View. Numerous requests for the new publication "Control of Pocket Gophers" were received.

Richardson's Ground Squirrel

In the light of severe damage caused to cattle ranges in Special Areas 2 and 3, field research was continued a second year to evaluate the feasibility of employing biological methods for controlling Richardson's Ground Squirrels (prairie gophers). Two summer research technicians were hired to conduct research of an "applied" nature on carefully selected "plot" sites in the Hanna-Youngstown area. Information obtained from field trials was supported with some laboratory work. Much basic and practical information has been acquired over the past two summers. However additional research is necessary to determine the practicality of using antifertility agents on a large scale (1-2 sections) control operation.

Other Field Rodents

Damage to shelterbelts, ornamental and orchard trees, as well as lawns, was severe. This was the result of high bush rabbit and field mouse densities, particularly in northern areas of the province. Printed information was supplied on control measures for rabbits and mice damaging ornamentals and shelterbelts. Information was also supplied on the control of ground squirrels, skunks, woodchucks, badgers, snakes, and bats.

Magpies

Several municipalities conducted winter programs to reduce magpie numbers in response to many complaints of livestock damage in a variety of areas. Poison sets contributed to the greatest number of magpie kills, with the use of circular-design live traps on the increase. A publication outlining the circular trap technique was prepared and distributed to district and municipal offices.

Nuisance Birds

Printed information was updated and supplied on the control of nuisance birds such as sparrows, blackbirds, pigeons, gulls, etc. Various scaring devices, repellents, and control techniques were field tested to develop practical control measures. Reports of severe damage to sunflower and corn crops in localized areas of Southern Alberta were also received. Assistance and liaison with municipalities involved, was also provided to Duck Lure Crop Programs conducted by the Fish and Wildlife Division in the Grande Prairie area.

Coyote Control

The approved poisons, strychnine, cyanide guns and compound 1080, were supplied to land owners in 87 approved municipalities which cover the agricultural region as shown in the following tables:

	Coyote Getters	Cyanide Cartridges	Scent (2 oz. jars)	Strychnine (cubes)	Estimated Coyotes Killed
1969	73	542	278	15,000	6,565
1970	288	1,040	283	21,500	8,344
1971	450	1,165	355	17,820	4,263

The use of most poisons remained at about the same level. Power toboggans were in common use for hunting coyotes. The threat of rabies in some areas increased interest in coyote control. In the fringe areas of settlements, coyote and other predator control was continued in cooperation with the Department of Lands and Forests.

Compound 1080 baits were used in sparsely settled areas to assist farmers where other control measures were not sufficient. Under the cooperative program, the following districts used 1080 baits during the winter season:

District	No. of Baits Set
Cardston, M.D. # 6	27
Kneehill, M.D. #48	12
Lac Ste. Anne, County #28	10
Mountain View County #17	11
Parkland, County #31	1
Pincher Creek, M.D. #9	2
Taber, M.D. #14	11
Vermilion River, County #24	3
Wainwright, M.D. #61	3
Warner, County #5	4
Willow Creek, M.D. #26	6
I.D. No. 10	8
I.D. No. 14	4
I.D. No. 18	1
Total	103

A large number of districts shared baits and coordinated control on a regional basis. Summary of 1080 program for the last five years:

	1967	1968	1969	1970	1971
Number of 1080 Sets	256	247	108	114	103
Number of Districts Using	40	38	14	14	14
Number of Districts Approved	80	80	80	80	80

The 1080 baits were prepared by three branch officers, then distributed and disposed of by municipal and provincial fieldman. All municipal officers were checked out for training requirements. New municipal fieldman and assistants were trained in coyote control techniques and issued with Form B training certificates.

Several municipalities initiated, on a trial basis, a proposed program to establish predator specialists to assist landowners with severe predator problems. This approach emphasized the removal of "killer" coyotes on a selective basis with the objective of reducing predator damage rather than coyote numbers per se. A successful training seminar on animal pest control techniques was held in May with approximately 40 provincial and municipal field staff, and candidate predator specialists attending. In a combined effort with Canadian Wildlife Services approximately 80 coyote livers and hair samples were collected for mercury level analysis.

Other Predators

Several reports of wolves and other large carnivores causing damage in settled and/or fringe areas were received. Requests for assistance were handled by field staff or were referred for action to the Fish and Wildlife Division. Considerable damage to apiaries was caused particularly in the Peace River region. Field trials were conducted to improve success with the cable-foot-snare. This resulted in modifications which provided good results with this selective and non-injurious method of removing bears from beeyards. Liaison was continued with the Fish and Wildlife Division, and numerous complaints of bear depredation were referred to it for action.

PLANT INDUSTRY LABORATORY

The primary responsibility for the laboratory was to provide a professional diagnostic and information service to department staff, who work directly with the public. Specially trained personnel, special equipment, facilities and techniques, not available in extension offices, were employed. Dr. H. Vaartnou became Head of the Botany Section and Miss G. Rankin became Botany Assistant.

Mr. D. Stelfox left the Plant Pathology Section in September for an 18 month educational leave in Australia. Dr. A. W. Henry became Acting Head and Miss M. Valleau served as a junior scientist. Dr. J. S. Horricks joined the laboratory in October to assist with plant disease diagnosis and to fill the position of Supervisor, Plant Pathology. Dr. I. Tewari joined the laboratory in November to assist in isolating and identifying diseases found in the Alberta Rapeseed Disease Survey. Six Ecology Corps students were assigned to the laboratory May to September. Mr. R. D. Dixon became Head of the P. I. Laboratory on April 1, with responsibility for administration of the laboratory as well as Head of the Entomology Section.

The laboratory staff devoted part time to field investigations. Diseases of cereals, flax, rapeseed, nursery stocks, and stored vegetables received special attention. (Insect problems on rapeseed (e.g. Bertha armyworm), field crops and vegetables and blackflies were typical problems investigated by the entomology section.) New weed species e.g. cleavers and stork's bill, poisonous weeds, noxious weeds and collection of Alberta plants for diagnostic purposes were typical problems handled by the Botany Section. A number of special investigations and research projects were initiated. Laboratory personnel became involved in joint research projects with university and federal agencies. Laboratory and field investigations in addition to providing a public service, were useful in maintaining personal contact with commercial growers, industry and other researchers.

The following is a summary of the numbers and categories of specimens received for diagnosis, identification and recommendations. A number, however, yielded answers only after lengthy examination, culturing and observation. A few involved investigations which are still proceeding. Total specimens numbered 2358 compared to 2141 in 1970.

	Plant Identification	Insects	Diseases	Misc.	Total
Cereal and Forage	49	50	182	....	281
Special Crops	....	94	65	....	159
Ornamentals	17	324	503	....	844
Shelterbelts	....	23	29	....	52
Vegetables	2	41	131	....	174
Fruits	5	20	144	....	169
Stored Products	....	36	....	....	36
Household	....	138	....	....	138
Public Health	....	25	....	....	25
Veterinary	34	6	....	....	40
Weeds	79	....	....	....	79
Noxious Weeds	74	....	....	....	74
Native Plants	188	....	....	....	188
Miscellaneous	35	19	2	....	56
Exotics	23	20	....	....	43
Total 1971	506	796	1056	....	2358
Total 1970	397	532	1212	....	2141
Total 1969	428	508	1158	12	2106
Total 1968	364	425	1133	22	1944

Botany Section

The number of plant specimens submitted for identification increased from 397 in 1970 to 506. Botanically the submitted plants belonged to 66 families and 285 species. Agronomically the plants could be classified as: Cereal and Forage spp.—49; Ornamentals—17; Vegetables—2; Fruits—5; Poisonous plants—34; Noxious weeds—74; Native plants—188; Exotic plants—12; Miscellaneous plants—11; and Unidentified—35.

A total of 563 flowering plants were collected, identified and added to the Laboratory Herbarium. The number of Herbarium specimens increased from 1,761 in 1970 to 2,324 and 205 specimens were re-identified. A collection of mosses (20 species) and lichens (7 species) was started and added to the herbarium. In conjunction with the veterinary laboratory, nine special investigations of the occurrence of poisonous plants were undertaken. In cooperation with the Weed Control Branch, 10 weed kits containing 342 specimen sheets of the most troublesome weeds, were prepared and distributed to regional supervisors and weed control staff.

Entomology Section

Insect problems in identification, control, and design of control programs were the most frequent problems encountered. In many instances a joint approach by both the laboratory entomologist and the field entomologist was required to solve some of the more complex problems. The number of service problems was greater than in 1970. Special investigations on biting flies, aphid virus transmission, Bertha armyworm, clover cutworm and other economic insects took considerable time and effort.

The number of insect specimens submitted increased significantly. Between entomology, invertebrate and vertebrate zoology, a total of 27 orders and 86 families were recorded as being of economic importance to Alberta farmers and urban dwellers. Problems arising from most specimens were handled immediately, except where the insects required rearing before an identification could be made. The work load overlapped into such fields as veterinary, medical, stored products, household, economic and general entomology. Special investigations were carried out on a provincial or regional, rather than a local basis as outlined below. Local problems were isolated common insect problems. These did not require special attention other than an identification and control recommendation.

1. Mosquitoes

A special committee updated the mosquito control publication where Baytex was reinstated in the list of recommendations, and coordinated the work of various agencies. There were 18 areas in Alberta undertaking mosquito control, under permit, and using over 3,000 lbs. of active insecticide. Only chemicals recommended were used in these programs. More emphasis was placed on source reduction as a means of control. Dursban was tested at three rates and proved effective at the 0.025 and 0.05 lbs. per acre rates. Abate tossits were tested and found not effective under Alberta spring temperatures. In view of these findings, Abate tossits were not recommended for mosquito control. Work progressed on a Manual of Mosquito Control for Western Canada with the first draft planned for next spring.

2. Blackflies

A work-planning meeting was held to coordinate operations for blackfly research in the Athabasca area for 1971. Participating agencies were Canada Agriculture, University of Alberta, Fish and Wildlife and the Department.

The blackfly problem in Athabasa was divided into two parts. *S. arcticum* which breeds in the Athabasca River was studied by Dr. K. Depner. The second part of the problem, caused by *S. venustum* and *S. vittatum,* breeding in small streams, was handled by Branch staff. Abate and Methoxychlor insecticides used as larvicides at 0.3 ppm gave complete control for five miles of stream. Bottom mud, vegetation and water samples were taken for residue analysis. Preliminary studies using foggers and 1% Vapona solution appeared very encouraging for dairy feedlots but not for field use.

3. Aphids

A survey undertaken at Peers to determine the presence of the green peach aphid in seed potato improvement plots, indicated highest numbers of aphids in early July. Further studies are needed to ascertain if control measures are needed for aphids, which are vectors for potato viruses.

4. Rapeseed Insects

Beet webworm outbreaks in the southern part of the province were investigated and Dylox recommended for control purposes. The clover cutworm broke out in the Harmon Valley area of Peace River and Dylox was recommended for control. Lannate was tested on a 40 acre plot at 4 and 8 oz./acre. Control results were excellent. Bertha armyworm outbreaks were investigated and Lannate was recommended for control. In total 16 important species of insects were found on rape crops.

Plant Pathology Section

Of the 1,056 specimens submitted for pathogen identification, the most striking feature was that approximately 80% concerned horticultural plants. About 50% concerned ornamentals, mostly from urban areas. In order to get at the source of the problem, it was recommended that the Alberta Horticultural Advisory Comittee consider action to make clean propagative stocks available to the public. For field crops it was again apparent that new varieties had accentuated damage from certain diseases e.g. some affecting flax. The need for disease-free seed was also apparent.

1. Carrot Root Rots

Comparative studies in the morphology and physiology of about a dozen isolates of *Phytophthora,* obtained from roots of Brooks carrots affected with rubbery brown rot, were continued to determine the principle cause of this important storage rot and conditions affecting its development. Cottony soft rot, another serious disease which developed in carrot roots at Brooks, was also studied. The causal fungus *S. sclerotiorum* produces sclerotia readily and investigations were continued to develop practical control measures. During the summer an outbreak of soft rot of carrots occurred in several fields in the Brooks area. Investigations showed that high moisture conditions were involved. A publication was provided on this disease and on measures for controlling it under both field and storage conditions.

2. Seed Infestation

Seed infestation studies on flax were continued and a few on wheat, barley, rape and sunflowers were undertaken. Varietal reactions and seed treatment were given consideration.

3. Crown Rot of Elders

This disease continued a problem to home owners, nurseries and public institutions. The causal fungus was confirmed as *Phytophthora citricola.* Investigations showed that top symptoms may not be expressed for several years after original infection. To resolve the problem, the need for certified disease-free nursery stock was further illustrated.

4. Silver Leaf of Cotoneaster

The hedge cotoneaster, *Cotoneaster lucida* which is an important hedge ornamental developed a disfiguring disease in widely separated parts of the province. The Silver Leaf fungus *Stereum pupureum* was considered an important causal agent even though it has not been previously reported on this host. Further investigations are needed.

5. Collar Rot of Apples

A collar rot disease of young apple trees which developed in an Edmonton nursery was investigated and shown to be caused by *Phytophthora syringae.* Good evidence was obtained that this new problem was introduced with nursery stock imported from British Columbia. The diseased material was destroyed to prevent spread.

6. Fungal Cankers of Woody Ornamentals

Canker disease of woody ornamentals were the most common and destructive diseases of these plants. Mountain ash, birch and dogwood were commonly affected. Isolations from cankers yielded fungi belonging to the genera *Cytospora, Nectria* and *Diaporthe.* These were examined to determine their specific identity, and pathogenicity especially following predisposition of their hosts.

Extension and Communication

Communication was maintained through personal letters, telephone calls, bulletins and personal investigations with department extension personnel, agricultural fieldmen, parks' personnel, farmers and ranchers, nurserymen, greenhouse operators, homeowners, veterinarians, and researchers. The laboratory head and professional staff attended 120 meetings and conferences, made 58 field trips, attended 15 short courses, conducted 11 special investigations, prepared 6 bulletins, and 9 scientific papers. Demands for in-depth investigation of plant and insect problems resulted in an increasing amount of time being spent by each of the professional laboratory staff in perusal of scientific literature available at the laboratory or in the University research library. By this means the staff were better able to cope with incoming specimens and with special requests for scientific information needed to solve local or regional problems.

PESTICIDE RESIDUE

More than 1,000 samples were analyzed for pesticide residues by the Dairy and Food Laboratory. Seven samples of commercial food products were found to contain pesticides over the tolerances allowed by the Food and Drug Directorate. Through grower cooperation and regulatory action such products were not permitted to enter commercial markets. The Branch cooperated with the Dairy and Food Laboratory, the Food Residue Committee, the Veterinary Services Division, the Animal Industry Division and other agencies concerned. All problem cases were investigated to determine the source of residue and to advise the producer or processor on corrective action to eliminate pesticide residues.

Other agencies or specialists were consulted on the more difficult problems for techniques or follow-up investigations. Major problems in residues involved (1) Contaminated feed being fed to beef cattle, (2) High level of P.C.B.'s and lindane in imported foods, (3) Wild birds and rodents contaminated with mercury or insecticides, likely from treated seed.

Milk, other dairy products and meat products were randomly sampled to ensure that the public received safe milk and food. Considerable information and guide lines were developed which will be useful for resolving future problems. The Branch cooperated with Food and Drug in handling residue problems in food and with Canada Agriculture on residue problems in commercial feeds. Most actions were preventive to ensure that only safe food and feed entered market channels.

Upland game birds were collected and analyzed for mercury. It was confirmed that mercury levels were low in early spring then increased in June-July and dropped off toward fall. There was no potential hazard to human health and hunting of game birds was allowed.

Warnings were issued through Publication 607/400 "Pesticide Residues Can Be Serious", circulars, posters, farm meetings, radio, press and TV on how residues develop and how they may be prevented. Through close cooperation between federal and provincial agencies, as well as random monitoring of the main food products, problems were kept to a minimum and the safety of the consuming public was maintained.

COMMITTEES AND PESTICIDE CONTROL

The branch head served as secretary of the Pest Control Advisory Committee which held its 15th annual meeting in November. The P.C.A.C. served as a liaison group for representatives from provincial, university and federal agencies in entomology, plant pathology, health, wildlife and industry. It resolved various problems including conflicting interests in pest control programs and reported to the Alberta Agricultural Coordinating Committee.

The branch head also served as secretary of the Alberta Interdepartmental Committee on Pesticides which held its regular meetings in May and December. The A.I.C.P. resolved a variety of problems concerning various disciplines and agencies i.e. pesticide residues, training and licensing of commercial pesticide applicators, safety programs, restriction, regulation and disposal of pesticides, review and statistics of use, etc. Branch staff served on the P.C.A.C. and A.I.C.P. and on the various subcommittees which handled special problems such as publications, nuisance birds, mosquito control, pesticide training and licensing programs, review of pesticide label claims, etc.

The Branch was responsible for administration and operation of the Agricultural Chemicals Act. In the second year of operation some 260 commercial pesticide applicators were licensed for administration and enforcement of proper pesticide use, application and disposal. A five-man Agricultural Chemicals Advisory Committee, chaired by the branch head, continued to advise the Minister and implement action programs. In October administration of the Act and the position of Supervisor, Agricultural Chemicals were transferred to the Department of Environment by cabinet decision.

As provincial representative the Branch Head served on the Canada Committee on Pesticide Use in Agriculture (CCPUA) which met in Ottawa in March. The annual meetings of the western sections of CCPUA were attended at Saskatoon in October by the supervisor, Entomology-pesticides, the laboratory entomologist and the branch head. The Western Committee on Crop Pesticides and the Western Committee on Livestock Pesticides dealt with regional problems and developed recommendations for the control of crop and livestock pests. The guides developed by the WCCP and the WCLP were used as bases for up-dating provincial publications, restricting persistent pesticides, and were distributed as reference material for district and municipal offices. All staff were increasingly involved in various committee work, investigations, public meetings and inquiries to cope with the much increased public concern about pollution and proper use of agricultural chemicals.

OTHER ACTIVITIES

The branch head and section supervisors spoke at 70 public meetings, short courses and field days. They attended 92 conferences, committee meetings, and work sessions with municipal, provincial and other agencies. Sixteen articles were prepared for department releases and the farm press and 20 radio and TV interviews were made. Some 185 special field investigations were made on various pest and pesticide problems. Seventeen printed extension publications were kept up-dated and distributed.

Branch staff cooperated with other agencies in arranging and operating the fourth Pesticide Training Course attended by about 200 pesticide applicators at the Olds College. Several other training courses were organized or assisted with. Liaison was maintained with university, municipal, provincial, federal and industry agencies in pest control and pesticide use.

Scientific papers* were published and papers were presented at major meetings** as follows:

* 1 Effect of Treating Barley Seed with Fungicides on Emergence, Covered Smut, and Common Root Rot. Horricks, J. S., Pesticide Res. Report, 1971.

2 Effect of Seed Treatment on Emergence and Diseases of Rape. Horricks, J. S., Pesticide Res. Report, 1971.

3 Effect of Systematic Fungicidal Foliar Sprays on Some Diseases of Rape. Horricks, J. S., Pesticide Res. Report, 1971.

4 Influence of Crop Residue and Fertilizers on Stand, Yield and Root Rot of Barley in Southern Alberta. Pittman, U. J., and J. S. Horricks, sub. Can. J. Plant Sci., November, 1971.

5 The Effectiveness of Lannate for the Control of the Clover Cutworm. Dixon, R. D., Pesticide Res. Report, 1971.

6 Effectiveness of Abate 4E and 15% Methoxychlor for the Control of Blackfly Larvae in Small Streams in Northern Alberta. Dixon, R. D., L. K. Peterson and L. C. Pledger., Pesticide Res. Report, 1971.

7 Effectiveness of Dursban for the Control of Mosquito Larvae. Dixon, R. D. and D. J. Pledger, Pesticide Res. Report, 1971.

8 Effect of Temperature on the Rupturing of Abate Tossits. Dixon, R. D. and D. J. Pledger, Pesticide Res. Report, 1971.

9 Dispersal of Abate Tossits. Dixon, R. D. and D. J. Pledger, Pesticide Res. Report, 1971.

10 Turf Diseases in the Lower Mainland of British Columbia. Vaartnou, H., Can. Pl. Disease Survey, Vol. 50, No. 4, p. 138-141, 1971.

11 Evaluation of Candidate Pesticides for Seed Treatment, Vaartnou, H., Pesticide Res. Report, 1971.

12 Efficacy of Foliage Sprays for the Control of Root Rot and Staghead on Rape. Vaartnou, H., Pesticide Res. Report, 1971.

13 Efficacy of Kocide 101 for the Control of Leaf and Stem Diseases on Barley. Vaartnou, H., Pesticide Res. Report, 1971.

14 **Phytophthora syringae** (Kleb.) Kleb. Causing Collar Rot of Young Apple Trees in Alberta. Henry, A. W. and D. Stelfox., Proc. Can. Phytopath. Soc., p. 16, 1971.

15 Capturing Black-billed Magpies with Circle-Shaped Live-Traps. Alsager, D. E., J. Stenrue and R. Boyles. In press. JWM Ms. #205-0. Jour. Wildl. Mgmt, 1971.

** 1 "Safe Use of Seed Treatment Insecticides." L. K. Peterson. Annual Meeting, Alberta Cooperative Seed Processors. January, 1971. Edmonton.

2 "Use of Mercury in Canadian Agriculture." J. B. Gurba. Symposium—Mercury in Man's Environment. Royal Society of Canada. February, 1971. Ottawa.

3 "Agriculture—Pollutant or Benefactor (Pesticides)." J. B. Gurba. Unifarm Pollution Seminar. March, 1971. Edmonton.

4 "Agriculture and Environmental Improvement." J. B. Gurba. Annual Meeting, Agricultural Service Boards. March, 1971. Edmonton.

5 "Pest Control and Rabies." J. B. Gurba. Annual Meeting, I.D. Advisory Committees. March, 1971. Edmonton.

6 "Agricultural Chemicals Legislation." J. B. Gurba. Annual Pesticides Training Course. April, 1971. Olds.

7 "Legislation and Policies in Animal Pest Control." D. E. Alsager. First Annual Seminar, Animal Pest Control. May, 1971. Edmonton.

8 "Handling Vertebrate Pest Problems." D. E. Alsager. First Annual Seminar, Animal Pest Control. May, 1971. Edmonton.

9 "Problems and Policy on Vertebrate Pest Control." D. E. Alsager. Seminar, Simon Fraser University, June, 1971. Vancouver.

10 "Value of Pesticides." J. B. Gurba. Annual Meeting, Agricultural Pesticides Society. July, 1971. Lethbridge.

11 "Impressions of Diseases of the Peace River Area." J. S. Horricks. Annual Meeting, Alberta Plant Pathologists. October, 1971. Lethbridge.

12 "Rape Residue and the Next Crop." J. S. Horricks. Annual Meeting, Alberta Plant Pathologists. October, 1971. Lethbridge.

13 "Status of Seed Treatment Chemicals." J. B. Gurba. Annual Meeting, Alberta Plant Pathologists. October, 1971. Lethbridge.

14 "Major Insect Pest Programs in Alberta in 1971." L. K. Peterson. Annual Meeting, Entomological Society of Alberta. October, 1971. Kananaskis.

15 "Bacterial Ringrot in Alberta in 1971." J. S. Horricks. Annual Meeting, Potato Improvement Committee. November, 1971. Calgary.

16 "Bear Depredations in Alberta Apiaries." D. E. Alsager. Annual Beekeepers Convention. November, 1971. Calgary.

FIELD CROPS BRANCH

J. D. Jantzie, B.Sc., P.Ag., Head

GENERAL

Alberta's 1971 production of field crops was maintained by increased acreages of wheat, barley and rapeseed. Yields equalled long term averages. Improved marketings, particularly of feed grains and rapeseed generally strengthened farm cash grain receipts—an increase of 15% over 1970.

Continued aggressive sales and promotion policies are an essential element of the agriculture industry.

Increased branch programs to assist Alberta producers were highlighted by extension activities of a demonstrative nature. Demonstration assistance was provided in areas of alternate crops, field peas, forage and cereals. Variety demonstrations and assistance were given to the Alberta corn committee to continue their program of investigation into corn adaptability.

STAFF CHANGES

Dr. W. J. Awram was appointed as Alberta Supervisor of Apiculture.

Robert Wroe, formerly with the Department of Lands and Forests, was appointed Alberta Supervisor, Range Management, with headquarters at Hanna.

L. G. Welsh, formerly District Agriculturist, Olds, transferred to Regional Plant Industry Supervisor for Region 2 located at Calgary.

REGIONAL PLANT INDUSTRY SUPERVISORS

The six regional plant industry supervisors represented the division on the regional "team". Main activities centered around field demonstration activities, farm meetings, field days, and assistance to local government and extension programs. Crop diversification opportunities were explored as well on specific production problems, such as fertility, adaptability, suitability, insect and disease problems.

IMPROVEMENT PROJECTS

Cereal and Oilseed Crops

Cereal and Oilseed Pedigree Seed Production

Following is a summary of acres and estimated yields of cereals and oilseeds inspected for pedigree status:

	1970			1971*		
	Acres	Yield (bu.)	Yield/Acre	Acres	Yield (bu.)	Yield/Acre
Hard Red Spring Wheat	21,777	790,022	36.2	19,467	699,231	35.9
Soft White Spring Wheat	437	14,720	34.6	605	30,170	49.8
Durum Wheat	10,552	361,745	34.2	5,646	183,528	32.5
Winter Wheat	20,558	804,930	39.1	23,713	914,805	38.5
Oats	19,022	1,368,006	71.9	11,148	814,309	73.0
Barley	33,702	1,887,872	56.0	49,320	2,880,362	58.4
Spring Rye	231	4,830	20.9	109	3,600	33.0
Fall Rye	4,363	130,035	29.8	1,290	46,204	35.8
Triticale	28	1,100	39.2	....	....	....
Flax	17,977	346,167	19.2	4,544	82,462	18.1
Oriental Mustard	40	42,000 lb.	1,050 lb.	60	20,000 lb.	333.3 lb.
Field Peas	47	1,517	32.2	103	4,183	40.6
Rapeseed	5,524	4,340,765 lb.	784. lb.	10,500	(estimated)	

*Preliminary estimate

Cereal and Oilseed Breeder Seed Distribution

The following table summarizes the allocation of Breeder seed in pounds by crop kind and variety. A total of 2,311 lbs. was distributed.

Wheat	lb.	Oats	lb.	Barley	lb.	Rapeseed	lb.	Flax	lb.	Peas	lb.
Chinook	40	Random	550	Betzes	84	Echo	5	Noralta	45	Trapper	30
Hercules	80	Rodney	90	Bonanza	180	Span	217	Redwood 65	30		
Neepawa	210	Harmon	30	Centennial	48	Zephyr	21				
Park	25			Conquest	126						
Sundance	110			Galt	24						
Thatcher	50			Olli	72						
Winalta	20			Jubilee	24						
Wascana	200										
TOTAL	735		670		558		243		75		30

In addition, the following initial distributions of new varieties were made:

Kind	Variety	Select.	Foundation
Rape	Span	—	62,700 lbs.
	Zephyr	—	4,500 lbs.
Winter Wheat	Sundance	700	—
Durum Wheat	Wascana	200 bus.	—
Oats	Random	723 bus.	—

The Branch supported the federal announcement of complete changeover to the low erucic acid rapeseed varieties and pedigreed seed growers co-operated by producing sufficient Foundation and Certified Span and Zephyr to sow the entire 1972 rapeseed acreage (estimated to be 2,000,000 acres).

Alberta Cereal and Oil Seed Advisory Committee

The committee reviewed research data and recommended the following changes for the publication "Varieties of Cereals and Oilseeds for 1972":

1. Centennial barley transferred to malting section.
2. Wascana durum wheat, equal to quality of Hercules, was added to durum section and Stewart was deleted.
3. Added Sundance winter wheat, which is recommended in area 2.
4. Random oats was added to the description of oat varieties, and Pendek was deleted.
5. The Rapeseed section added new low erucic acid varieties Span, a Polish variety, and Zephyr and Oro which are Argentine varieties.
6. Discussed varietal disease reaction and updated relative varietal yields.

The committee also updated the subcommittee's terms of reference.

Municipal Co-operative Seed Cleaning Plants

Two new plants were completed in December 1971, at Bonnyville and Clandonald, bringing the total to 68. Four additional areas, Valleyview, Wembley, Worsley and Foremost, incorporated and are raising share capital for plant construction.

Under the guidance of the Weed Control Branch and Field Crops Branch, municipal agricultural fieldmen (with their team) inspected, rated and issued permits to all qualifying seed cleaning plants doing custom cleaning. A number of schools were held again to instruct inspectors in proper rating of plants. There are a total of 220 stationary and portable seed cleaning plants in the province.

A general summary follows:

	1969-1970*	1970-1971*
Total Commercial Seed Cleaned	15,513,975	16,464,348
Total Pedigree Seed Cleaned	594,906	831,608
Total Seed Cleaned	16,108,881	17,295,956
Total Dockage Cleaned	3,126,303	2,613,904
Total Bushels Cleaned	19,235,184	19,909,860
Total Bushels Treated (Fungicide)	2,905,796	2,962,376
Total Bushels Treated (Insecticide)	327,730	559,019
Average Number of Bushels Cleaned per Plant	287,092	297,162

*Year End June 30th.

FORAGE CROPS

General

Following the significant increase in acreage seeded down to forage crops resulting from the Federal Lift and Grassland Incentive programs, the Field Crops Branch placed greater emphasis on promotion of hay and pasture crop management.

As indicated in the following production tables, there was a definite trend towards growing forage crops as an alternative for resolving grain surpluses.

While conditions were less favorable for the forage seed producers in 1971, forage yields were excellent and a good quality crop was harvested. No shortage of pasture was experienced.

TABLE I PRODUCTION OF HAY CROPS IN ALBERTA

Year	Acreage	Yield/Acre	Production
1969	2,900,000	1.37 tons	4,000,000 tons
1970	3,400,000	1.82 tons	6,200,000 tons
1971	3,600,000	1.70 tons	6,100,000 tons

TABLE II ESTIMATED SILAGE PRODUCTION IN ALBERTA

Year	Acreage	Yield/Acre	Production
1970	110,000	6 tons	660,000 tons
1971	130,000	6 tons	780,000 tons

TABLE III ESTIMATES OF FORAGE SEED PRODUCTION

Crop	1965-69 (Average)	1970	1971
Alfalfa	1,173	1,020	600
Alsike	7,700	6,850	3,500
Sweetclover	4,402	2,400	8,500
Birdsfoot trefoil	5	10	55
Red Clover	5,600	10,415	4,550
Brome	3,217	4,000	3,000
Crested Wheat Grass	607	1,300	2,600
Meadow Fescue	113	215	600
Creeping Red Fescue	13,053	19,600	8,000
Timothy	1,756	1,400	1,400
Russian Wild Rye		250	200
Pubescent Wheat Grass		220	300
Perennial Rye Grass		330	500

FORAGE SEED PROMOTION

A. Pedigree Seed

The acreages and estimated yields of forage crops inspected for pedigree status in Alberta during 1971 are summarized in the following table:

Crop	Acreage	Estimated Yield
Brome	4,626	1,271,000
Creeping Red Fescue	1,514	434,800
Orchard Grass	374	75,000
Reed Canary Grass	110	20,000
Perennial Rye Grass	635	179,500
Russian Wild Rye	1,343	239,000
Timothy	2,830	662,750
Crested Wheat Grass	6,298	1,433,350
Intermediate Wheat Grass	223	69,500
Pubescent Wheat Grass	408	111,400
Slender Wheat Grass	90	49,000
Streambank Wheat Grass	125	29,000
Tall Wheat Grass	160	26,000
Alfalfa	1,465	220,000
Alsike	185	35,000
Red Clover	574	150,000
Sweet Clover	10	4,000
Birdsfoot Trefoil	196	25,000
Sainfoin	44	40,000
Total	21,210	5,074,300

B. Basic Seed Distribution

Under the Canadian Forage Seed Project the Field Crops Branch distributed to Alberta farmers the following quantities of breeder and foundation seed:

1. Breeder Seed for contract foundation production—

Oxley Cicer Milkvetch	90 lb.
Boreal Creeping Red Fescue	45 lb.
Melrose Sainfoin	150 lb.
Kay Orchard Grass	50 lb.
Norlea Perennial Rye Grass	150 lb.
Climax Timothy	50 lb.
Kane Alfalfa	75 lb.
Drylander Alfalfa	20 lb.

2. Foundation Seed for multiplication of certified seed—

Beaver alfalfa	260 lb.
Boreal creeping red fescue	749 lb.
Champ Timothy	445 lb.
Carlton brome	425 lb.
Leo Birdsfoot trefoil	50 lb.
Magna brome	1,100 lb.
Melrose Sainfoin	250 lb.
Orbit tall wheat grass	200 lb.
Ottawa Red clover	25 lb.
Parkway crested wheat grass	460 lb.
Rambler Alfalfa	100 lb.
Revenue slender wheat grass	200 lb.
Roamer Alfalfa	590 lb.
Sawki Russian wild rye	400 lb.
Yukon sweet clover	150 lb.

3. Japanese Seed Trade—

A forage seed mission from Japan sponsored by the Department of Industry, Trade and Commerce, toured some of our Province's research and production areas. Increased export of forage seed may result.

C. Forage Crop Management Assistance Program

A program oriented directly to the improvement of practices related to the production and utilization of forage crops was introduced in 1971, providing direct grants to local governments without requiring financial participation by the municipalities. The purpose was to provide encouragement for the adoption of improved forage management practices and a greater net return from the grass converted acreages. Stability and maintenance of an optimum grain to forage acreage ratio was also considered.

Funds were provided for the establishment of field scale demonstration plots of pasture, hay and silage crops and for holding field days, educational tours, etc. on a district or regional basis.

Assistance to individual farmers was also provided for the adoption of improved and recommended practice of forage production and utilization management. Thirty nine of the sixty Agricultural Service Boards in Alberta participated in the program. Approximately 500 farmers took advantage of the direct assistance provided.

D. Native Range Development and Pasture Improvement

In co-operation with the Department of Lands and Forests, this Branch outlined a project and assistance was made available for the development of range on private land as well as on public lands held under individual grazing leases. The appointment of a range management specialist was designed to facilitate the implementation of this program as well as to give greater emphasis to other programs of range management.

E. The Alberta Forage Advisory Committee

The field crops branch arranged for holding the Committee's annual meeting to review the year's activities and current research work related to forage crops.

Other contributions of the Branch to the Committee's achievements during the year are listed.

1. The preparation and distribution of a forage crop variety leaflet with recommendations for 1971 and 1972.
2. The collection and distribution of recent publications and references on forage crop management.
3. The preparation of an outline for a forage crop variety testing and ecology project for presentation to the Alberta Agricultural Co-ordinating Committee.

Alberta Rapeseed Insect Control Assistance Program

An emergency program was formulated to assist farmers who, of necessity, sprayed rapeseed crops with insecticides. The department, in addition to other services reported in the crop protection branch, agreed to pay $1.00 per acre for each acre of rapeseed sprayed.

Assistance for direct operating expenses was also offered to local governments who provided the necessary service at the local level.

Assistance paid as at December 31, 1971 amounted to $249,405.16.

Seed Dealers Act

Nineteen seed dealers were licensed under the Act.

Agricultural Relief Advances Act

Assistance in the form of loans for the purchase of seed, feed and fuel was extended to Improvement Districts No. 18 and No. 22. Total advances amounted to $16,818.20.

Royal Winter Fair

The branch continued its policy of assisting exhibitors at the Royal Winter Fair. Mid and late summer drought conditions reduced quality of exhibits.

Alberta major award winners were as follows:

World Championship

Table Potatoes	Fujimoto Farms Ltd.	Ranier

Championship

Grass Seeds	Julius Scriba	Grande Prairie

Reserve Championships

Winter Wheat	Mrs. Lloyd Mercer	Lethbridge
Barley 2 rowed	Don Anderson	Kathryn
Spring Wheat	Kevin Niemi	Trochu
Flax	A. G. Strain	Foremost

First Prizes

Pedigreed Barley	J. H. McLaughlin	Spruce Grove
Pedigreed Flax	A. G. Strain	Foremost
Pedigreed Hard Red Spring Wheat	A. G. Strain	Foremost
Hard Red Winter Wheat	Mrs. Lloyd Mercer	Lethbridge
Alfalfa	M. Dvornek	High Prairie

Brome Grass	Julius Scriba	Grande Prairie
Oats Sheaf	Carl Brown	Brooks
Barley 2 rowed	John Kusick	Hairy Hill
Oats	Tom Rhatigan	Edmonton
Barley	Don Anderson	Kathryn
Hay	Donald E. Atkinson	Lacombe
Wheat	Kevin Niemi	Trochu

AGRICULTURE

General

The 1971 honey crop was possibly the largest on record. Due to a general world shortage of honey, prices were high. The fortuitous combination of a large crop and high prices resulted in possibly the best year in the history of beekeeping in Alberta.

World interest in Alberta honey was high. Total exports were estimated at 12,000,000 pounds, more than three time the usual amount. Most exported honey went to Japan and the U.S.A.

A Japanese delegation, representing the Japan Honey Co-operative toured Alberta in August as guests of the Canadian Beekeepers' Council and the federal and provincial governments. The tour was highly successful.

The total number of colonies was estimated to be 110,000; somewhat less than in 1970.

Package Bees and Queens

The quality of package bees and queens imported from the U.S.A. was good. Queen losses were estimated to be 7%. Of the 61 dead queens sent into the lab for analysis, 21 were found to be infected with Nosema disease. All 21 were traced to a single California supplier.

Disease Inspections

Poor weather conditions and the inability to attract competent part-time inspectors impeded inspection services for the 2nd consecutive year.

	1970	1971
No. of apiaries inspected	632	740
No. of colonies inspected	4,825	3,817
No. of apiaries with American foulbrood	94	91
No. of apiaries with European foulbrood	—	1

Statistics	1970	1971**
No. of colonies	120,000	110,000
No. of beekeepers	1,500	1,500
Average yield per colony	184	195
Total honey production (ooo lbs.)	20,080	21,450
Total value of honey (dollars)	2,811,200	3,861,000
Total value of honey and wax (dollars)	2,995,200	4,015,000
Price of honey per pound	14c	18c
Price of wax prepared	60c	70c

**estimated

Leafcutter Bees (*Megachile rotundata*)

The use of the leafcutter bee for alfalfa seed production in southern Alberta has become well established. Bee population increases were generally in the order of 2 to 1, down somewhat from the previous year, due to the cool rainy weather experienced in June and early July.

Experimental populations operated by the C.D.A. Experimental Station at Beaverlodge and Ft. Vermilion did well, with increases of 2 to 1. Another experimental population kept by the supervisor of apiculture just east of Edmonton increased at the rate of 3 to 1.

HORTICULTURE BRANCH

P. D. McCalla, B.Sc., P.Ag., Head

GENERAL

The branch head was the department's representative on the Provincial Planning Board and a member of the Edmonton Regional Planning Commission. He also served as the department's representative on the management committee of the Government Ecology Corps, the Corps being responsible for managing the summer employees program for students. He is a member of the Agricultural Marketing Council. A total of 56 working days were spent on the above activities.

The branch head was the secretary of Alberta Horticultural Advisory Committee and the Potato Tuber Indexing Committee. The latter Committee after nearly 30 years advising the seed potato industry was disbanded. He was a member of the Potato Improvement Committee, the Elite Potato Improvement Committee and the Tree Advisory Committee. He was a member of the executive of the Alberta Horticultural Association and acted as editor of that organization's quarterly publication, the "Alberta Horticulturist".

He acted as judge at 4 local horticultural shows, addressed public meetings on various horticultural subjects and took part in 6 T.V. programs and many radio shows.

The cities of Red Deer and Calgary co-operated with the department in providing horticulture extension studies.

TREE DISTRIBUTION AND SHELTERBELT EXTENSION

Shipping of the woody plant material, grown at the Provincial Tree Nursery, started on April 15th, and was completed on May 17th.

Tree distribution for the following services was carried out.

Shelterbelt Establishment

A total of 4,244 Alberta farmers received trees for shelterbelt plantings. A summary of the type of trees distributed is exhibited in Table I.

TABLE I

Type of Trees Distributed	Number of Trees Distributed
Tall Deciduous Trees	416,000
Small Deciduous Trees	34,000
Hedge Plants	1,056,000
Coniferous Trees	300,000
Conservation Bundles*	1,000

*Conservation bundles contained 36 fruit bearing woody plants were distributed to farmers interested in wildlife promotion.

The trees listed in Table I were used for establishing the following types of plantings.

TABLE II

Type of Planting	Number of Trees Distributed
Farmstead Shelterbelts	804,000
Field Shelterbelts	91,000
Roadside Hedges	306,000
Replacements	305,000
Plantings on Small Holdings	96,000
Miscellaneous plantings	204,000
Total	1,806,000

Townsite Beautification

In total 12,750 trees and shrubs were shipped to 27 cities, towns and villages.

Arbor Day Trees

A total of 25,500, 4 year old Colorado Spruce seedlings were distributed to 3 cities.

Provincial Parks—Department of Lands And Forests

Twenty-two thousand trees and shrubs were distributed for planting in 25 Provincial Parks.

Ecology Corps

A total of 40,000 seedling sized trees were distributed to 42 cities, towns, villages and municipalities for plantings under the Ecology Corps activity.

Sale of Surplus Plant Material

57,500, 4 year old Colorado Spruce seedlings surplus to A.D.A. needs were sold to 20 commercial nurseries in Alberta.

Several field days were held throughout the Province advising on shelterbelt establishment and pruning practices. During the spring smaller urban centers were contacted and advice was given, concerning beautification practices.

During the period April 1st, 1971-November 1st, 1971, $19,312.00 was granted to Agricultural Service Boards for support in their shelterbelt plantings and related horticulture activities.

Press releases were prepared advising on tree planting and tree maintenance practices. Active participation was given to local and provincial exhibits, advising the public on horticulture in general and shelterbelts in particular.

PROVINCIAL TREE NURSERY—OLIVER

CONES

The following quantities of cones were received during the year: White Spruce 1,234 bushels, Lodgepole Pine 8,732 bushels and 71 bushels of Douglas Fir.

SEED EXTRACTION

The amount of seed extracted during the year was: White Spruce 1,056 lbs., Lodgepole Pine 269 lbs. and Douglas fir 43 lbs.

SEED TESTING LABORATORY

A total of 110 seedlots were tested during the year. Of this total 36 seedlots were tested during the period January-October. During the period November-December, a full-time assistant was allocated to this operation and 64 seedlots were tested.

SEED PURCHASE, COLLECTION AND RECEIPTS (SHELTERBELTS)

Addition to the shelterbelt seed inventory during the year are summarized as follows:

Species	Amount		Origin
	lbs.	oz.	
Common Lilac	25		Provincial Tree Nursery
Honey Locust	2		F. S. Schumacher
American Elm	15		City of Edmonton
Mayday	28	8	Provincial Tree Nursery
Saskatoon	1	8	Fort Saskatchewan (Sherrit-Gordon)
Caragana	300		Hutterite Colonies
Manitoba Maple	114		Provincial Tree Nursery
Green Ash	42		Alberta Hospital
Chocolate Hawthorn	25		Alberta Horticultural Research Center
Buckthorn	13		Provincial Tree Nursery
White Birch	10		Provincial Tree Nursery
Siberian Larch	41		Provincial Tree Nursery
Amur Maple	1	8	Provincial Tree Nursery
Bur Oak	277		University of Manitoba
Red Pine		½	Alberta Hospital
Mugho Pine	1	8	Alberta Hospital
Douglas Fir	4	10	Alberta Hospital
Chestnut		5	Alberta Hospital

SEED STORAGE

A start was made on the reorganization of the seed storage system. New containers were tested and a colour-coding system may be set up to permit rapid retrieval. New shelving systems have been investigated and sufficient shelving for one freezer compartment will be obtained in early 1972.

SEEDING

SHELTERBELT

The following table shows the amounts of seed sown in spring and fall of 1971.

Species	Spring Amount Sown			
	lbs.	oz.	How Sown	Production Aim
Caragana	150		2 ft. rows	See Fall seeding
Hawthorn	5	14	Seedbeds, broadcast	5,000
Dogwood	5		Seedbeds, broadcast	5,000
Bur Oak	15		Seedbeds, broadcast	10,000
Mayday	10		Seedbeds, broadcast	5,000
Pincherry	11		Seedbeds, broadcast	5,000
Buckthorn	5		Seedbeds, broadcast	2,500
Common Lilac	5		Seedbeds, broadcast	See Fall seeding
Lodgepole Pine	2		Seedbeds, rows	30,000
Scots Pine	1		Seedbeds, rows	30,000
Ponderosa Pine		5	Seedbeds, broadcast	—
Norway Spruce		1½	Seedbeds, broadcast	5,000
American Elm	4		Seedbeds, broadcast	25,000
Siberian Elm	6		Seedbeds, broadcast	50,000
White Spruce	4		Seedbeds, rows	150,000
Colorado Spruce	5		Seedbeds, rows	150,000
Siberian Larch	7		Seedbeds, broadcast	30,000

Species	Fall Amount Sown			
	lbs.	oz.	How Sown	Production Aim
Caragana	379		2 ft. rows	1,000,000
Common Lilac	5		Seedbeds, rows	40,000
White Birch	5		Seedbeds, broadcast (burlap cover)	2,000
Late Lilac	12		Seedbeds, rows	100,000
Honeysuckle	3		Seedbeds, rows	100,000
Green Ash	14		2 ft. rows	75,000
Manitoba Maple	172		2 ft. rows	100,000

FORESTRY CONVENTIONAL

Spring Seeding

Spring sowing was carried out with a production aim of 6,709,000 seedlings as follows:

Species	Production Aim
White Spruce	5,959,000
Lodgepole Pine	670,000
Douglas Fir	80,000
Total	6,709,000

Germination was very poor for all seedlots sown in late May, in addition to which a serious weed problem developed as a result of wet weather experienced during the months of June-July, inclusive. This combination of circumstances made it necessary to plough down seedbeds with an allocated production aim of 3,520,000 seedlings in early August. There was a complete cover of annual weeds, including groundsel and wild mustard, without any appreciable germination of crop.

The remainder of the spring seeding was as follows:

Species	Origin	Production Aim	Seed Used	
			lbs.	oz.
White Spruce	Athabasca		90,000	9
White Spruce	Edson	150,000	9	11
White Spruce	Footner Lake	500,000	10	
White Spruce	Grande Prairie	324,000	10	8
White Spruce	Lac La Biche	80,000	3	
White Spruce	Rocky Mtn. House	250,000	5	3
White Spruce	Peace River	70,000	5	
White Spruce	White Court	350,000	6	
White Spruce	Slave Lake	200,000	5	
White Spruce	Slave Lake	2,320,000	35	ploughed down
White Spruce	Faust Project	1,2000,000	6	ploughed down
White Spruce	Private Companies	365,000	11	
Engelmann Spruce	Crowsnest	60,000	4	8
Douglas Fir	Crowsnest	80,000	8	
Lodgepole Pine	Bow	200,000	5	
Lodgepole Pine	Crowsnest	120,000	7	6
Lodgepole Pine	Edson	150,000	9	
Lodgepole Pine	Rocky Mtn. House	100,000	6	
Lodgepole Pine	Grande Prairie	160,000	10	
Lodgepole Pine	Peace River	30,000	6	14
Lodgepole Pine	Private Companies	50,000	3	
Jack Pine	Athabasca	60,000	4	

Fall Seeding

The fall seeding volume was greatly expanded in order to make up deficiencies resulting from the spring seeding failure. The following table summarizes the program:

Species	Origin	Production Aim	Seed Used	
			lbs.	oz.
White Spruce	Athabasca	100,000	3	8
White Spruce	Crowsnest	100,000	2	9
White Spruce	Grande Prairie	374,000	11	15
White Spruce	Lac La Biche	2000,000	11	
White Spruce	Rocky Mtn. House	250,000	10	
White Spruce	Peace River	150,000	6	8
White Spruce	Slave Lake	4,320,000	135	10
White Spruce	Whitecourt	500,000	16	
		5,994,000	197	2
Lodgepole Pine	Crowsnest	100,000	3	5
Lodgepole Pine	Grande Prairie	230,000	7	5
Lodgepole Pine	Edson	150,000	7	2
Lodgepole Pine	Rocky Mtn. House	50,000	2	1
Lodgepole Pine	Peace River	50,000	2	4
		580,000	22	1
Total		6,574,000	219	3

FORESTRY CONTAINERS

Container seedling production for 1971 is summarized in the following table:

Species	Forest	Seeding Date	Number of Seedlings
White Spruce	Athabasca	June/71	89,424
Lodgepole Pine	Bow River	March/71	62,400
White Spruce	Bow River	March/71	40,320
Lodgepole Pine	Crowsnest	March/71	62,784
White Spruce	Crowsnest	March 71	38,592
White Spruce	Edson	March/71	36,480
Lodgepole Pine	Edson	April/71	66,080
White Spruce	Grande Prairie	March/71	100,800
Lodgepole Pine	Grande Prairie	March/71	98,880
White Spruce	Lac La Biche	April/71	103,376
Lodgepole Pine	Rocky Mtn. House	March/71	43,200
White Spruce	Slave Lake	June & September/71	43,200
White Spruce	Slave Lake	June & September/71	20,016
White Spruce	Slave Lake	June/71	20,756
White Spruce	Slave Lake	September/71	20,756
White Spruce	Whitecourt	December/71	100,080
Total			962,746

In addition to the table, just over 100,000 Finnish paper pots were seeded, for trial purposes, to a Slave Lake seedlot.

HERBICIDES

A total of 161 lbs. Linuron was applied to 56 acres of miscellaneous crops, both deciduous and coniferous. The chemical exhibited a satisfactory degree of control over spring germination of weeds, but residual control was limited during the unusually wet early summer.

Both of the soil fumigants Vapam (at 80 gallons per acre) and Mylone (at 600 lbs. per acre) were used for fall treatment of one acre of the 1972 seedbed area (i.e. two acres in fall). The results of treatment will be assessed during the 1972 growing season.

Pipelines and fence lines were treated with Gramozone, used as a wetting spray.

FALL DIGGING

Weather during September and October was favourable for fall digging operations. The latter went very well although some difficulty was experienced in pulling overgrown (3-0) Caragana in Field No. 20. The following stock was graded, bundled and stored by the beginning of November.

Species	Number Dug
Mayday	5,075
Pincherry	1,425
Bur Oak	5,325
Villosa Lilac	147,525
Buckthorn	2,575
American Elm	25,250
Golden Willow	6,825
Acute Leaf Willow	33,800
Laurel Leaf Willow	77,925
China Willow	6,250
Peach Leaf Willow	3,125
Caragana	676,925
Manitoba Maple	117,825
Dogwood	9,175
Hawthorn	650
Black Ash	825
Green Ash	78,800
Common Lilac	1,450
Siberian Elm	24,000
Brooks No. 1 Poplar	8,200
Brooks No. 6 Poplar	18,625
Russian Poplar	64,100
Mixed Poplar	14,425
Honeysuckle	109,700

SHIPPING

During the year a total of 938,900, 3-0 coniferous seedlings and 115,550, 3-2 coniferous transplants were shipped to the various forest districts. In addition 364,213 container grown seedlings were raised and distributed.

CUTTINGS

During the spring 630,000 hardwood cuttings from poplar and willow were planted while in the fall 233,000 suitable rooted cuttings were harvested. Towards the end of the year 430,000 hardwood cuttings were stored for next year's crop.

STAFF

Mr. John Chedzoy left the staff at the end of April. Mr. R. H. Hillson took up his duties as Superintendent on the first of May, and Mr. G. Ontkean joined the staff as Assistance Superintendent on the 22nd of September.

Mr. B. Ward commenced education leave on the first of September, and will be attending the University of Alberta in the Faculty of Agriculture (Forest Science) during the balance of 1971-72.

BUILDINGS

CONSTRUCTION

The new office buildings were completed in April and were occupied by the end of that month.

The new 62' x 32' greenhouse was covered with Fulcron and brought into operation in March.

A dry sand store was completed in October.

An extension to the mezzanine in the Seed Extraction plant was also completed in October. This is for storage of cone-tray trolleys and other equipment, and greatly eased the congestion in the vicinity of the scorcher and the drying kilns.

OTHER

An intercommunication system was installed in August. This permitted loudspeaker announcements from any office telephone to all main working areas (packing shed, seed storage, large walk-in cooler, seed extraction plant, etc.). In addition to this, talk-back phones were installed in the packing shed and seed extraction plant.

MISCELLANEOUS ACTIVITIES

RESEARCH

Nursery staff co-operated with the Canadian Forestry Service personnel engaged in research aimed at providing information on the following:

Optimum winter storage conditions for coniferous stock.

Reclamation of saline soils in the nursery.

Use of nitrogen-phosphorus fertilizers.

An assessment of grass versus cultivation culture for 8 (clones) of hybrid poplar.

A monitoring system for the nursery, to determine percent loss of nursery crops from seedling to field establishment, as well as contributory factors. Also included in this study were investigations into disease control problems and the effect of different storage times and types of packing.

Staff from the Provincial Department of Agriculture carried out trials with soil fumigants for use in pre-sowing treatment of seedbeds and, in addition to this, laid out herbicidal trials in a young shelterbelt at the Nursery.

Provincial Tree Nursery staff were engaged in investigations into the following:

—Use of containers in nursery production of deciduous and coniferous stock.

—The needs or otherwise, for stratification of spruce seed from a number of sources.

—Techniques for overwintering of container-grown coniferous seedling.

SPECIAL CROPS

Acreage of Vegetable Crops in Alberta

Fresh	1970	1971
Cabbage	180	200
Carrots	530	480
Corn	560	490
Cucumbers	90	90
Onions	250	195
Parsnips	80	65
Potatoes	30,000	30,000
Rutabagas	295	210
Radishes	30	55
Processing		
Beans	535	535
Carrots	100	66
Corn	1,990	2,150
Peas	3,546	2,550
Red Beets	50	32

CABBAGE

In many instances, 1971 was one of the poorest cabbage years on record. A significant portion of early cabbage did not reach the market because of adverse weather conditions. Much of the late cabbage did not store well, some was caught by frost and not harvested.

CARROTS

Acreage of carrots levelled off in 1971, fewer growers were involved, yields and quality were excellent. Hail caused considerable damage in various areas throughout Alberta. Markets remained strong and strengthened during the fall of 1971.

CORN

Total production of corn was down in Alberta. Markets were strong and prices received averaged considerably above those of 1970. The need for proper handling of fresh corn was very evident in consumer reaction to the 1971 crop.

CUCUMBERS

Weather conditions during the 1971 growing season were not conducive to good cucumber production. Yields generally were down from 1970, and only the Peace River area experienced a surplus of any size.

ONIONS

1971 onion acreage was down slightly from the previous year; however, total marketed tonnage was up considerably, indicating that growers were becoming more competent in both production and storage.

PARSNIPS

In-storage browning was a major limiting factor in long term market development for this commodity.

POTATOES

Alberta's potato acreage dropped slightly in 1971. Markets were weak and prices generally low. The processing potato industry suffered from dried up European markets and United States protectionary policies. However, Alberta growers continued to dominate winnings at the Toronto Royal Winter Fair and still have the best potatoes in North America.

RADISHES

Production of radishes increased significantly over the past year and market potential indicated room for further increase.

RUTABAGAS

Growers and shippers of rutabagas needed to pay greater attention to specific market requirements when marketing this crop. Alberta rutabagas could become a premium production if they were properly merchandised.

PROCESSING CROPS

A great deal of success was experienced in the production of processing crops in 1971, with the exception of green beans. Cold mid-spring weather, which adversely affected bean growth, provided excellent conditions for green pea development; consequently excellent yields were harvested. Hot weather from mid- to late-summer produced a good quality corn crop. Losses experienced by bean growers, because of adverse weather, were covered for the first time by "all risk" crop insurance.

GREENHOUSE VEGETABLE CROPS

Increased production and profit have made this segment of Alberta's fresh vegetable industry one of the most progressive.

MAJOR ACTIVITIES

An extensive, in-depth brief was prepared and submitted to the department for consideration as a program under the new Federal-Provincial ARDA Agreement. This program was designed to encourage farm diversification into vegetable crops and aid in the mechanization of that industry. Indications are that this program will not be accepted and efforts in this direction will have to be carried provincially. A one row fresh market sweet corn harvester was purchased during 1971 to begin this program.

The special crops supervisor continued to act as secretary-manager to the Alberta Fresh Vegetable Commission for most of 1971. Partially through this involvement, a significant portion of time was spent on planning and implementation of "Gardening is Groovy", a major promotion of Alberta's horticulture industry at the Calgary Exhibition and Stampede.

Out-of-province travel included representing the Alberta Department of Agriculture at Canadian Horticultural Council, and attendance at a customer service school for fresh corn harvesters in Portland, Oregon.

The special crops supervisor acted as co-ordinator to the County of Newell for a series of potato demonstration projects set out by their plant protection officer. In addition, several other demonstration type projects on other vegetables were also co-ordinated.

Continued emphasis was placed on vegetable storage research, tying in such factors as storage management, produce handling, and market requirements. Research projects were also started in several areas of cultural practice, particularly for onions.

1971 was an active year for material preparation and presentation. Several papers were authored or co-authored and presented to the annual meetings of the Canadian Society for Horticultural Science, the Western Canadian Society for Horticulture and the Alberta Fresh Vegetable Commission. The manuscript for the bulletin on onions was also revised.

OTHER ACTIVITIES

The special crops supervisor served as secretary to the Seed Potato Growers Association of Alberta, chairman of the Ad Hoc Committee on Carrot Storage Research, and served on several other committees as well.

Assistance was provided in the preparation of several television programs, with appearances on a few as well.

Continuous efforts in public relations, industry promotion and consumer education were part of the continuing duties of the special crops supervisor.

ALBERTA HORTICULTURAL RESEARCH CENTER, BROOKS

INTRODUCTION

Co-operation between staff of the Alberta Horticultural Research Center and architects and planners of the Department of Public Works resulted in a long term building and capital improvement plan. The plan detailed changes required in utilities and related services, traffic flow, areas of development and new construction.

Policy definition was obtained for the Center's tree and shrub distribution program; problems related to support of the nursery industry in Alberta were the major consideration in these changes.

An increased seasonal staff due to acquisition of ten Ecology Corps members allowed more work to be done on Center beautification—e.g. over a mile of poplars were pruned, and many of the younger shelterbelts cleaned. These students gave very satisfactory service.

Co-operative projects were again stressed—meetings with staff from Lethbridge, Morden and Indian Head assisted in defining our longer term programs. One new area of work, forage and grass crop variety testing, will be added to the Center's present corn and sorghum trials in 1972. The Western Irrigation District leased the Center approximately 15 acres at Strathmore for long term trials on vegetables, small fruit and development of a test arboretum.

CAPITAL IMPROVEMENTS AND MAINTENANCE

Irrigation equipment on the main farm was updated through the purchase of a larger pumping unit for the tree production area and a new system for the bedding plant, perennial and juniper collections as well as for the demonstration orchard north of the main building. Additional facilities for the vegetable plots; and a trickle irrigation system for small fruits and for greenhouse crops were also added.

Levelling of the vegetable and pilot project plot area and tree production area was completed at the Macleod Farm. This involved relocating a "natural" surface drain. An underground tile line was constructed from the main canal to a central sump in the center of the vegetable and pilot project plots. Initial stages of terracing were also completed, as the underground tile line and water take-outs would not have survived the traffic from earth moving equipment. Two wheel-move system and main line were installed to irrigate the plot area below the terraces. Mr. L. Spiess of the Water Resources Division, Department of the Environment, designed the water transfer system, and land levelling detail. Mr. J. McCracken of the same division undertook a deep soil core analysis for subsurface soil texture and soil content.

Approximately one-half mile of the drainage canal bordering Plot 2 was deepened, to allow improved drainage and land reclamation north of the rose garden.

The quonset greenhouse was moved to a permanent location, and recovered. A compost and soil storage building (100' x 25') was constructed. The polyvinyl chloride covering on greenhouse No. 14 (part of the completed glazing trial) was removed as it had "browned" to opaqueness. Fibreglass (Filon) replaced the P.V.C. A small boiler was installed to provide soil sterilization capability to this set of houses. A lighting system was constructed in greenhouse No. 14 for chrysanthemum trials. Cold water had caused considerable leaf damage and wetback over the past few years, hence a water heating system was connected into these houses. A valving system utilizing domestic hot water was installed in the main building greenhouses.

Construction of the maintenance building was begun during October with completion anticipated during March, 1972. The Potato Research Laboratory will be re-tendered in 1972. The seed cooler (24' x 36') was completed and is now in use. A "ring" water line was constructed to tie into the new buildings, and to allow eventual connection to the Town of Brooks water system.

An addition to the herbicide building to allow separate storage of insecticides was constructed. A two storey building, originally utilized for ice storage, was converted to a dry materials storage. Cooler No. 6 and No. 7 renovations were completed.

Two trailers (a "bunker" and a "cooker") were purchased for staff stationed at the Strathmore plots.

Fencing of the Macleod farm, and removal and replacement of the main farm plot fence was undertaken.

EQUIPMENT

A specialized nursery rotary cultivator and a nursery seeder were constructed at the Center. A new plot tractor, multiple cone seeder unit for installation on one of the small plot tractors, several light trucks, a backhoe, and a sweet corn harvester were added.

Laboratory equipment was upgraded through various purchases. A multipoint recorder was installed in Cooler No. 7 for storage experiments.

EDUCATION

An estimated 2,500 casual visitors and 1,000 visitors on tours and field days were hosted at the Center. The ninth annual field day was a particular success—over 750 persons attended.

Lectures, short courses, demonstrations and field days involved about 20% of professional and technical staff time.

More emphasis than normal was placed on fairs and judging. Commitments to the Calgary Stampede, to the Lethbridge Exhibition and the Provincial Horticultural Show required considerable expenditure. Over 45 man days were directed to judging at various fairs and shows throughout the southern part of the province.

Approximately 50% of the calls received by the Center were from producers or agribusiness. The remainder came from home owners, both rural and urban.

The "Tradition and Transition" report on agricultural extension in the province prompted re-appraisal of Center staff extension services. Staff acted primarily in a staff function to district agriculturists and other government staff. The exception was in pilot projects, where Center staff usually initiated producer contracts. Limitation in staff availability necessitated maintenance of this system, however considerably more effort will be required in some areas.

Staff participated in meetings of the Western Canadian Society for Horticulture, the Agricultural Institute of Canada, the Alberta Institute of Agrologists, Canadian Horticultural Council, the Mid-West Greenhouse Vegetable Conference, the Prairie Regional Potato Committee, the National Potato Utilization and Potato Association of American Conference, Canadian Phytopathological Society, Canadian Botanical Society, and numerous industry oriented meetings, growers conferences and committees relating to horticulture.

STAFF CHANGES

Mrs. D. L. Gertzen (nee Douglas) resigned effective June 1, 1971, and was replaced as Environmental Horticulturlist by Mr. E. B. Casement.

Mr. A Bouvier replaced Mr. P. d'Argent as Horticultural Technician I in the Vegetable Crops Section.

Mr. B. Briant replaced Mr. B. Van Oirschot as Horticultural Technician I in the Vegetable Crops Section.

Mr. G. Cornelsen came on staff as Farm Worker I.

ALBERTA HORTICULTURAL RESEARCH CENTER

ADVISORY COMMITTEE

This committee, organized as a subcommittee of the Alberta Horticultural Advisory Committee, met twice during the year.

At the Committee's fall meeting, approval was given to the formal statement of the purpose and goal for the Center.

CENTER PROJECTS

Programs in vegetable and special crops, in environmental horticulture, and in fruit crops continued to expand, with an increasing emphasis on pilot projects directed at new crop development related to market potential. Projects continued at the Strathmore sub-station, at locations near Taber, Coaldale, Medicine Hat, Drumheller and three Agricultural Colleges, the Peace River Gaol, and various other locations throughout the province.

VEGETABLE CROPS

607 varieties of 47 kinds of vegetables were grown. In addition to basic horticultural characteristics, yield and disease resistance, observations were taken on earliness, suitability for commercial production and processing quality. Storage quality is an important factor as well, hence those vegetables which could be stored were under test in the appropriate type of storage.

The potato breeding program was quite involved. "Norgold Russett", "Earlane", "Viking", "Norchip", "B.P. 64-4-1", "F5208", F5889", "F6075", "F.S. 6339", "B.A. 6334-20", "W168-20", "W245-2" and "B.P. 62-8-3" were used for controlled crossing in the greenhouse. About 16,000 first year potato seedlings from the previous year's controlled crosses were grown in isolation as single hill plants, 9,000 being the product of our Brooks controlled crossings and 6,000 received from Aberdeen. There were 5 crosses which looked very valuable in their progenies. The co-operation with the Experimental Farm at Aberdeen was broadened through personal contact with Dr. J. Paveck at the National Potato Conference (Fargo, North Dakota). In addition to the first year seedlings, 194 older Brooks seedlings were grown in the breeding plot. Some of these were part of the Prairie Potato Trials also. From these seedlings, 103 selections were made in addition to the 300 single hill selection.

The early tuberizing trials were designed to evaluate those potato cultivars with potential for marketing between the middle of July and the 20th of September. In 1971, 13 cultivars were grown in a four replicated randomized trial. The date of planting was May 11th, which was exceptionally late in comparison with a normal year, because soil conditions were not favorable earlier for seed bed preparation.

Three harvests were made—July 27th, August 10th, and August 24th. In addition to yield and marketable percentage, specific gravity, boiling and chipping quality were also evaluated. The results of this trial indicated that "Viking", Norgold Russet", "F. 6075", and "F.S. 6233" were all better in the yearly performance than "Warba".

Twelve selections were grown in the 5 replicated Prairie Trial. Three harvests were completed during August and the final harvest was done in the last week of September. In addition to the horticultural characteristics, boiling, baking, chipping, french-frying, reducing sugars, starch, and specific gravity tests were done on this trial. The main crop, early and chipping advanced trials with three replicates, included 31 selections. These advanced adaptation trials were not as complicated in procedure as the Prairie

Regional Trial, and were designed to give information regarding one particular characteristic of this stock as indicated in the title of each specific trial. The final evaluation of these potatoes was processed, and a final report is to be published in the Proceedings of the Prairie Potato Committee. The "Red" Replicated Trial was a special project for the critical comparison and evaluation of the six most promising red colored potato cultivars. The number of testing places for the National Adaptational Trial was reduced to two locations in Alberta. C.D.A. Lethbridge, picked up this responsibility; therefore the Center used a similar type single row trial only for the preliminary evaluation of 52 Brooks seedlings. Thirty-five Brooks seedlings were involved in the National Potato Trial on different levels of testing.

37,000 tomato plants were grown in the breeding plot. From the 804 selections, 929 re-selections were made. The selection procedure was improved by total sugar tests and pH determinations immediately following single plant selection in the field. All seedlings which showed a total sugar value lower than 1.3395 or a pH value higher than 4.5 were discarded. This test eased the load and prevented handling of seedling material which did not stand up to these two basic quality requirements. Good progress was made during the last few years in the improvement of firmness in new seedling material. Storage and handling equality evaluation will be added to our selection procedure in the advanced stage of the seedlings. "B.V. 132-2300", "B.V. 132-2301", and "B.V. 132-2293" seedlings have reached this final stage of testing, after being checked at 40 research institutions in Canada and the United States for their performance under many different environmental conditions. "B.V. 132-2300" displayed outstanding firmness in combination with large sized, perfectly round, smooth and crack-resistant fruit, which suggested that this seedling met the requirements of the fresh market.

Five varieties of specialty ("Baby") carrots were grown. They were shorter, more tender and sweeter than the ordinary fresh market carrots. Some of these varieties showed promise for canning as a delicacy product. "Sucram Sweet" was outstanding, followed by "Finger Stick". "Baby Finger" was ideally shaped but the yield was very low. Further study is needed regarding the cultural practices for baby carrots. Processing procedures should be worked out for the production of canned or frozen delicacy products to reach the standards of imported baby carrots and to gain premium prices.

Transplants of eleven muskmelon varieties were started indoors on May 12th and transplanted under P20 hotcaps on May 19th. The plants were well established when the hotcaps were removed in the first week of June. Due to the well developed root system the plants put on a vigorous growth, although the weather was cool in June and the first three weeks in July.

There were a number of varieties which produced fruits equal to or better than imported muskmelons in general appearance and quality. "Gold Star" and "BP's Hybrid" were the outstanding varieties of the test followed by "Super Market". Four more varieties also reach fresh market standards. "Minnesota Midget" produced small fruits of very high quality, ideally suited for home garden use.

The test indicated that an early start and hotcap protection were very beneficial in this area. It is very probable that these varieties which performed so well in the Brooks area would do even better in the higher heat-unit regions of Alberta.

Eight varieties of pumpkin and 17 varieties of winter squash were grown and evaluated not only for horticultural characteristics but for culinary quality. Samples of ripened fruits were baked in the shell and as a pie filling, uniformly spiced.

"Small Sugar" was the outstanding pumpkin variety in the culinary trials."Connecticut Field" had been the heaviest yielder for the previous two years; however it produced only medium quality in 1971. The long cold spell in June and July delayed the ripening of this slightly later variety and its immaturity was reflected in its culinary scores.

"Golden Delicious" and "Sweet Meat" were the outstanding winter squash varieties. "Blue Hubbard", "Mammoth Chile", "Green Hubbard", "Bush Buttercup", "Golden Hubbard", "Perfection" and "Baby Hubbard" also produced good yields with good culinary quality. "Golden Nugget" was very good as pie filling, but the low yield made questionable the economical production of this variety.

These pumpkin and squash quality tests indicated that there are sufficient varieties which are well adapted to our climatic conditions. These varieties appeared to have good potential both for fresh market and for processing.

An observation trial was conducted with the following herbs and spices: anise, angelica, borage, dill, caraway, catnip, chervil, coriander, cumin, balm, fennel, horehound, hyssops, lavender, marjoram, mint, peppermint, rosemary, sage, saffron, tarragon, and thyme. Results indicated that most of these new plants can be grown successfully in this region. These cultivars were harvested in different stages of plant development, dried, chopped and distilled at the Alberta Horticultural Research Center, and the raw oil was shipped to the food science department of the University of Alberta for refining and oil quality studies.

During 1970-71, cabbage of several varieties was piled at a depth of up to 6 feet into a bulk storage over a central air delivery duct. Temperatures were maintained at 32 to 33°F. Color maintenance after 6 months of storage was excellent.

The maintenance of quality in cabbage, as measured by green color, should be the prime aim in a storage program. Most storage structures used in Alberta for cabbage storage cannot provide conditions of 32°F, 95% relative humidity, and continuous ventilation, which are necessary for maintaining quality. A Filacell can provide these conditions; hence adapting it to bulk storage is our aim.

If quality of cabbage is measured by color, then the rate at which color is lost in storage becomes very important.

During 1970-71 an attempt was made to monitor color change through colorimetric spectrum absorption. Readings were made on a random basis using various wavelengths of light from 405 millimicrons to 620 millimicrons. The greatest change in absorbance at all wave lengths occurred between December 4th and January 14th. Very little change in absorbance occurred between January 14th and March 29th.

Carrots were stored at a depth of 6 to 7 feet piled over a central air distribution duct, temperatures were maintained at 33°F, and relative humidity was kept at 95%. Better results were obtained in bulk storage than in individual pallets because of more uniform air circulation, and thus more rapid cooling at time of loading. Losses to March 20th, after 6 months storage, were about 11%, considerably less than that experienced in pallets.

Two trials were conducted during 1971 to screen chemicals with potential for controlling weeds in "Netted Gem" potatoes. The major weeds included heavy growth of red root pigweed, mustard, smart weed and grasses, of which millets and barnyard grass were dominant. All chemicals were applied as pounds active ingredient per acre.

A pre-plant incorporated trial involved four treatments which were sprayed on May 21, 1971 incorporated with a hand rototiller to a depth of 3 inches and planted with potatoes the next day. EPTC 4 lbs., EPTC 4 lbs. + Linuron 1 lb., and EPTC 3 lbs. + R7465 1 lb. gave good weed control until the end of July. The latter two treatments were excellent on grass weed control.

A second trial involved the screening of fifteen chemicals at different rates and combinations totalling thirty-one pre-emergent treatments sprayed on May 31, 1971. Linuron 1 and 2 lbs., Monolinuron at 2 and 3 lbs. gave satisfactory control of broad leaved weeds only. NIA 20439 and BAS 2903 were not effective in controlling mustard. Treatments that received a rating of 7 and above on July 9, 1971 for both grass and broad leaved weeds included Chloramben 4 lbs., Dalapon 8 lbs. + Linuron 1 lb., Alachlor 4 lbs., Alachlor 2.5 lbs. + Linuron .75 lbs., Bay 94337 1 and 1.5 lbs., and Sinbar .5 lbs. + Linuron 1.5 lbs. By July 30, 1971 a heavy growth of new weeds was growing on the Choramben, Alachlor and Alachlor + Linuron treated plots while the Dalapon + Linuron and Sinbar + Linuron plots showed some emergence and growth of new weeds. Bay 94337 (Sencor) was the only treatment that showed excellent weed control throughout the season.

Carrots were seeded on raised beds in silt loam soil on June 8, 1971. The major weeds growing were red root pigweed and portulaca. Other weeds included lamb's quarters, shepherd's purse, kochia, Canada thistle and some grasses.

Pre-emergent treatments using five chemicals sprayed on June 8, 1971 showed that Linuron 1.5 lbs., Prometryne 1.5 lbs. and Chlorbromuron 1.5 lbs. gave very good control of weeds. Chloramben 6 lbs. and Chloroxuron 4 lbs. were not effective in controlling weeds.

A second trial involved four herbicides sprayed on July 13, 1971 as post-emergent treatments. Linuron 2 lbs., Prometryne 4 lbs., and Chlorbromuron 2 lbs. gave excellent weed control while Solan 4 lbs. gave fair weed control.

A screening trial using seven chemicals at different rates and in combinations totalling 26 pre-emergent weed control treatments were sprayed on June 29, 1971. The effects of the treatments were rated on July 29th, August 3rd, and August 20th, 1971. The major weeds growing included red root pigweed, barnyard grass, millets, ladies thumb and mustard. In general, Dacthal + CDAA were more effective in controlling weeds than Dacthal + CIPC. C7019 1 lb. + CIPC 3 lbs., or + CDAA 2 lbs., or + Propachlor 2 lbs. were generally good in controlling weeds.

ENVIRONMENTAL HORTICULTURE

Six 25' x 50' greenhouses were erected in the fall of 1967 to test the following glazing materials: lapped glass, butted glass, Vilon fibreglass, rigid polyvinyl chloride, Mylar, and single layer 4 mil polyethylene (UV-4). The Mylar was replaced by Fulcon in January, 1969. Seven tomato crops in ground beds were grown to test these materials.

Fibreglass and butted glass proved superior in the fall crops, with no difference being found in spring crops. Rigid polyvinyl chloride is not acceptable as a greenhouse covering.

Seventy-four tomato cultivars have been tested for yield and quality under different glazing materials. The most promising at present are: "Tuckross 520", "Super M", "Michiana #138", with "Pioneer x Rapids" from Dr. S. Honma, Michigan State University giving an exceptional early yield.

Fourteen cultivars of lettuce have been evaluated for suitability and production, with "Alsaska" and "Ostinata" showing good resistance to bolting in hot weather.

Both open pollinated and gynoecious cucumbers were tested for suitability under Alberta conditions.

Outstanding annuals in the 1971 bedding plant trials were:

Marigold—"Dolly Blend", "Gay Ladies", "Spanish Brocade"
Petunia—"Bo-Peep", "El-Toro", "Royal Ruby", "Tickled Pink"
Snapdragon—"Firebrand"
Zinnia—"Lipstick", "Peter Pan Pink", "Rosy Future"

The annual hibiscus ("Moscheute" and "Southern Belle") failed to flower before frost.

The poplar timber trial was instigated to evaluate the vigor, hardiness, disease and insect resistance, quality of timber, shelterbelt potential, and period of usefulness of species, hybrids, clones, and selections of poplar as they became available. There are now 72 species, etc. on trial, with 28 being added in 1971 at the Center and two nearby locations. Losses of 14% (at the Alberta Horticultural Research Center) to over 50% have occurred from lack of hardiness and animal damage.

The best six poplars in the spring of 1971 were: "P. 38 P. 38", "BNW #4", "Dunlop", P. "Dakotah", P. "Griffin", and P. "Northwest".

The woody ornamental trial at the Alberta Horticultural Research Center was started in 1958 in a continuing effort to find additional material suitable for Alberta conditions. In addition to the material distributed by the C.D.A. Station, Morden, which acts as co-ordinating and distributing unit of the Prairie Region Ornamental Trials, material has been brought in from private plant breeders, nurseries, other research institutions and native sources for evaluation.

FRUIT CROPS

Based on the results of a three year screening trial, the top twelve strawberry cultivars selected for overall performance were planted in the spring of 1970 in a replicated trial. All cultivars, except "Erie", showed excellent winter survival rating in 1971 without any cover. "Redglow", "Premier", and "Erie" received low plant vigor ratings in May, 1971. "Jubilee", "Senga Sengana" and "Protem" yielded over 3 kgs. per 2 meters of matted row which averaged 0.6 meter in width. These three cultivars also performed extremely well in winter survival and plant vigor ratings. "Veestar" and "Vibrant" yielded slightly less than half the yield of "Protem" although their survival and plant ratings were high.

Eighteen relatively new raspberry cultivars and numbered selections of raspberry were in a continuing process of evaluation. "Killarney", "Boyne", "Chief" (Standard), and "E609" had three or lower numbers of internodes winter killed when evaluated on June 10, 1971. The amber, purple and black raspberries had a much higher number of internodes killed. None of the cultivars had winter protection except for general shelterbelt planting.

"Boyne", "Killarney", "E609", "M541", "M542", and "M543", yielded over 5 kgs. per 2 meters of row. The 4.1 kgs. yield of "Chief" from the same length of row was primarily due to its smaller sized berries. Frozen fruit from the 1970 crop, evaluated in February 1971, showed poor ratings (unacceptable) for "E609" and "Wyoming Purple".

Alar 85, a growth retardant, was sprayed on June 13th and 22, 1970 on "Boyne" and "Latham" cultivars of red raspberry at 1,000, 2,000, 3,000 and 4,000 ppm. Cane survival was determined by the number of internodes killed in the spring of 1971. Spraying on the earlier date at all concentrations appeared to help in reducing the number of internodes killed in "Latham" while only the 4,000 ppm spray showed reduction in winter kill on "Boyne". This reduction in winter kill to the canes appeared to have contributed towards a corresponding increase in yield of fruit. Spraying at the later date had not been generally helpful in reducing winter injury to the canes although a slight reduction was noticed at the higher concentration on both cultivars. This reduction in winter injury also corresponded to slightly increased yields over the unsprayed treatment.

SERVICE SECTION

Tuber Indexing—1,125 tubers were submitted for the Tuber Indexing Program by the Elite Seed Potato Growers Association and the Alberta Horticultural Research Center. 344, or 29.6% were rejected and 774, or 68.8% were returned to the growers as clean seed. The tubers were brought into 72-75°F. temperature storage for warming on December 29, 1970 and tuber indexing was completed on January 5, 1971.

For the first time, a new method of breaking dormancy was introduced. Gibberellic acid, at a rate of 1000 ppm was used on the recommendation of the Plant Protection Division, C.D.A. This treatment caused very abnormal growth and plant development. The vines became very tall and weak, and leaves remained small and became curled and off-shaped.

Shelterbelt Production—Shipping in the fall consisted of 103,000 plants of 12 species for the Shelterbelt program, 1000 Conservation bundles totalling 22,000 plants, 72 4-H bundles and 284 bundles of poplar and willow whips for Oliver.

A total of 9,516 pounds of fruit were collected for the tree production program, giving 863 pounds of seed.

Thirty-nine pounds of seed were seeded in the fall in rows to enable tests on a nursery rototiller. In the spring 353 pounds of seed were sown for shelterbelt and conservation bundles with an additional 73 pounds being sown for rootstocks.

The maintenance greenhouses have been fully utilized again this year with tuber indexing, tomatoes, potatoes, small and large fruit breeding, and bedding plant production 20,000 vegetables and flowers).

Shelterbelt Renovation—In an effort to maintain good and practical shelterbelts on the Center, a continuous maintenance program was in progress. The poplars between Plots 7B and 9 were removed to allow the Manchurian Elm which were pruned, to develop. The "Griffin" poplars in Plot 6 were cut down to facilitate future plot levelling, while the Manchurian Elm between Plots 8 and 10 were cleaned up.

During the summer the Ecology Crops pruned to a five foot height about a mile of poplar along Plots 2C, 6, 7, 8, 9, 10 and 11 (in the center of the main farm) allowing air circulation and good light penetration. This made it possible to get machinery under the trees for ground maintenance and clean up. The Ecology Corps also maintained the younger shelterbelts, with the result that most of our shelterbelts were in excellent condition.

Tree Fruit Distribution—There were 162 applicants from 30 district agriculturists' districts approved to receive grafted tree fruits in 1971. Of these Barrhead, Camrose, Sedgewick, Stettler, Thorhild, Vulcan and Westlock D.A. districts had ten or more applicants each. A total of 674 Malus (apple), 277 Prunes (plum and cherry x plum hybrids) and 56 apricots were shipped. Grafted tree fruit and also small fruit plant material were shipped to the Colleges at Vermilion and Fairview to establish test orchards.

SOILS BRANCH

A. W. Goettel, B.Sc., P.Ag., Head

GENERAL

The activities of the soils branch were directed toward providing an effective program of education, demonstration, regulation and testing services for the efficient use and protection of Alberta's agricultural soils resources. In order to effectively meet this objective, branch activities included:

(i) obtaining information from research institutions, industry, other government departments and levels of government for educational and policies purposes and when required, to co-ordinate and/or direct research needs to appropriate institutions,

(ii) conducting diagnostic and applied research on soil and crop problems of economic importance to farmers, agri-business and others,

(iii) preparing material on soil management practices in such forms as reports, publications, press releases, radio and television programs, farm meetings and short courses,

(iv) providing assistance grants for remedial and preventative erosion control and demonstration projects and where they were ineffective, legislative control. (Soil Conservation Act)

This report includes situation statements and activities of the branch.

There was continued interest by farmers and the general public in agricultural pollution. Numerous seminars, conferences and meetings were attended and articles written by branch staff on the subject of pollution by agricultural activities.

The branch head was the department's representative on the Conservation and Utilization Committee when the Committee and the Water Resources Division were transferred to the new Department of the Environment. Considerable time was spent on committee and task force activities related to surface disturbance legislation, pollution and other environmental concerns. The committee also provides for a medium of exchange among departments at the administrative level.

Mr. Wm. H. Toews was appointed supervisor of soil conservation. He administers soil conservation programs and legislation through local government agricultural service boards.

Mr. D. C. Penney was on educational leave at the University of Alberta.

PUBLICATIONS AND EXTENSION

The two Guides to Fertilizer Use in Alberta were revised, printed and distributed in early 1971. A publication entitled, "Animal Waste Disposal in Alberta", was prepared in co-operation with staffs of the Animal Industry and Extension Division, the Department of the Environment and the Canada Department of Agriculture and printed for general distribution. The publication, "Farming Peat Soils in Alberta", was printed based on information obtained by Canada Department of Agriculture personnel at Lacombe. A publication on gully filling and prevention was revised for printing. A fact sheet on "Selenium-Soil-Plant-Animal Relationships" was prepared and distributed to Department staff, veterinarians and other interested personnel. Reports prepared for distribution to staff included nitrogen fertilizer effects on yield and protein, a review of sulfur deficiency in Alberta soils.

Short courses and farmers' meetings were attended by staff to deal with a range of topics related to soils, fertilizers, conservation and pollution. An in-service training course for municipal agricultural fieldmen was organized to provide information on soil conservation practices and legislation. An in-depth course on soil fertility and fertilizers was conducted for the Edmonton Grassland Association.

SOIL CONSERVATION

Soil drifting was slight in most areas of the province with moderate soil losses occurring in some localized areas. Soil erosion by water was severe in localized areas of south central Alberta and the Peace River area, and moderate in the areas north and east of Edmonton. Extensive erosion problems requiring considerable expense for correction were noted in the Peace River Region.

Soil conservation programs in 1971 were carried out as in 1970, under the direction of local agricultural service boards with financial assistance administered by the soil branch. Agricultural service board spending in 1971 could not accurately be determined at the time of writing, but was estimated to total $70,000 compared to $40,000 in 1970. The increase appeared to be due to the greater flexibility in the administration of Plant Industry grants for agricultural service boards with the opportunity for greater spending where necessary.

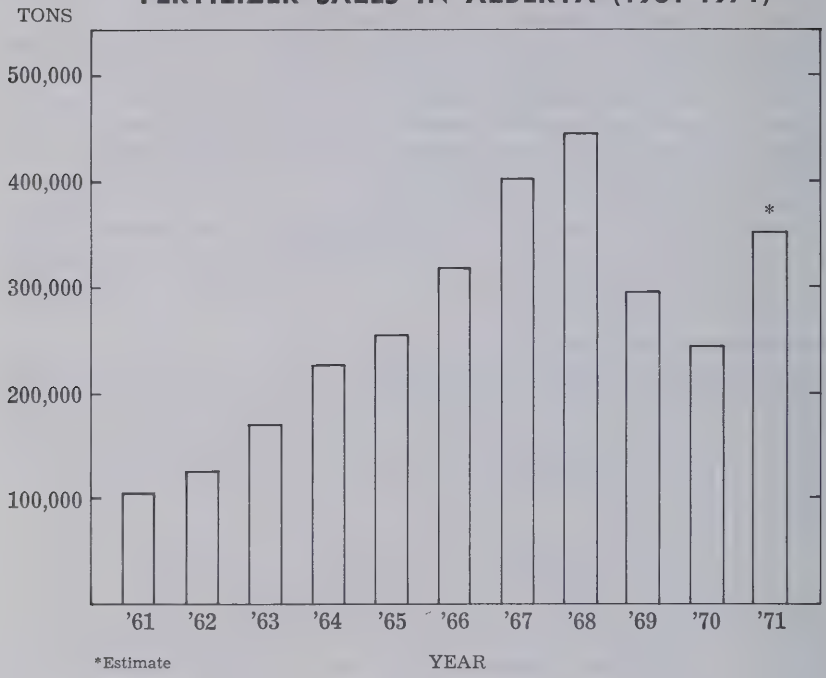
The Soil Conservation Act was administered in 1971 by locally appointed soil conservation officers as in 1970. The number of municipalities with both top soil removal and stubble burning by-laws remained at nineteen. Two notices under section 5 of the soil conservation act were issued.

A lack of information on the extent of soil erosion from agricultural lands in quantitative terms was noted.

FERTILIZER USE

The use of fertilizer by farmers was directly related to cereal crop market outlook prior to seeding. The outlook was better in 1971 and thus, was reflected in increased fertilizer use. It was estimated (Statistics Canada preliminary estimate) that 351,000 tons of fertilizer was used by farmers in 1971 compared to 265,059 tons in the previous year. The accompanying graph shows the trend in fertilizer use from 1961 to 1971. Nitrogen continued to be used in greater quantities than phosphorus, a trend started in 1968. Nitrogen as anhydrous ammonia continued to find increased use, i.e. 934; 8,636; 19,477; 15,285 and 24,801 tons for the years 1967 to 1971 respectively. The lower price per unit of nitrogen and availability of large application equipment resulted in this increased use of anyhdrous ammonia. There was a continuing large increase in the use of ammonium sulphate, a result of a large supply and low price per pound of nitrogen. The effect of this is reflected in the following figures on use: 1969 was 11,500 tons; 1970—51,200 tons; 1971—67,000 tons.

FERTILIZER SALES IN ALBERTA (1961-1971)



SOIL FERTILITY APPLIED RESEARCH

The branch continued a project on fertilizer use on rapeseed in co-operation with Western Canadian Seed Producers, Lethbridge. The project was designed to determine the response of added nitrogen on yield, oil and protein content of rapeseed in field tests. Results to date indicate rapeseed responds to higher applications of nitrogen than most cereal crops. It was noted that added nitrogen tends to increase the protein content of the seed and lower the oil content. This has been noted elsewhere. Of interest was the considerably lower average oil content of rapeseed grown on the six sites this year compared to 1970 irrespective of fertilizer treatment.

A number of applied research projects were continued in 1971 in conjunction with Dr. M. Nyborg of the soil science department at the University of Alberta. The projects were designed to assess crop responses to added plant nutrients and to correlate these responses with soil analyses and climatic factors. In view of the lack of information on rapeseed, a series of 15 tests were set out using barley and rapeseed crops. These tests were located in the general areas of Olds, Wetaskiwin, Leduc, Westlock and Morinville. Results from these and other tests placed out by the Canada Department of Agriculture, University of Alberta and the fertilizer trade will be compiled, interpreted and the data used to modify and improve recommendations for soil testing and fertilizer use.

SOIL TESTING

A total of 9,435 soil samples were tested for Alberta farmers, gardeners and greenhouse operators in 1971 (1970—8,068). Soil analyses for diagnosis of soil and crop problems and for research purposes (for C.D.A., University, industry) involved an additional 6,404 samples. Although there was a marked increase in fertilizer sales for the year, only a moderate increase in soil testing occurred. Fertilizer dealers were responsible for submitting over 65% of the samples received from farmers.

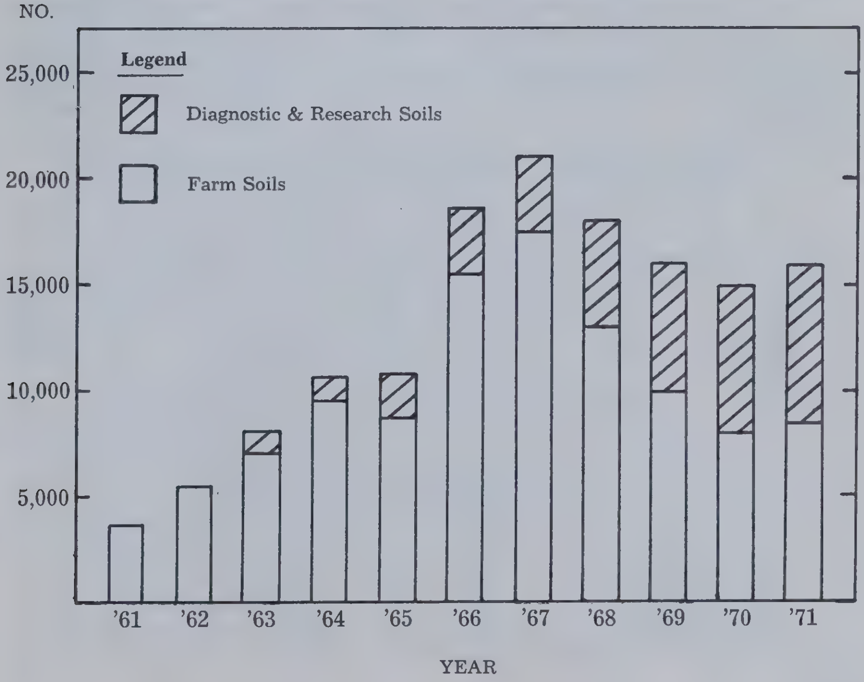
Recent emphasis on ecology has increased the number of samples submitted for diagnosis from parks and recreation areas, waste disposal and reclamation projects.

A project to determine the extent of sulfur deficiency in the agricultural areas of Alberta was conducted. Using results of two years of sulfur analyses, it was estimated that approximately 1.7 million acres of the presently cultivated land is deficient in sulfur. This would particularly be important in the growing of legumes and rapeseed and to a lesser degree cereal crops.

Soil test summaries showed that approximately 20% of all soil samples received by the laboratory have an acid soil reaction (pH 6.0 or less). Below this level alfalfa grows poorly and growth of some annual crops may be restricted by soil acidity. There is increasing evidence that liming may be beneficial in many areas of the province.

Retrieval of this information using results of soil analyses on computer tape has aided extension, agri-business and research personnel in better serving farmers in areas where problem soils are found.

NUMBER OF SOIL SAMPLES ANALYZED BY ALBERTA SOIL AND FEED TESTING LABORATORY



FEED AND PLANT TISSUE ANALYSIS

Work in the plant analysis section continues to expand with the increased emphasis on analysis to evaluate animal feeding materials and crop production problems. The number of regular feed samples analyzed was 4,192, representing an increase of 939 samples over last year. Investigational and diagnostic analyses were conducted on 3,089 samples for district agriculturists, regional supervisors, and other agencies co-operating in joint projects.

Considerable time and effort was spent in organizing and co-ordinating a selenium and trace mineral survey of Alberta grown forages. Feed materials from certain areas of the province are deficient in the essential animal nutrient, selenium. Delineation of those areas which may be potentially deficient is of considerable economic importance to livestock producers. Animal problems which may be related to selenium deficiency are included in the report of the veterinary services division. Over 700 forage samples were collected at two week intervals from selected locations throughout the province. Since the analysis is very complex and time consuming, many of these samples have not been analyzed but nearly 50% appear to contain low levels of selenium. This survey will continue in 1972 and will be extended to include cereal grains.

Work continued on refining an *In Vitro* technique for determining digestibility, and hence energy value, of roughage samples. There is an increasing need for criteria that more accurately assesses the true nutritional value of home grown forages and silages.

Nutrient requirement studies were conducted in conjunction with the Horticultural Research Centre and the University on greenhouse tomatoes, cucumbers and chrysanthemums and on field potatoes. This work combines plant tissue analysis with soil tests to determine nutrient requirements and plant growth problems.

The following tables provide a quarterly summary of the number and type of samples analyzed and reports issued during the year. The first table lists the number of soil, plant and feed samples received, Tables II and III list the types of feed materials submitted and the numbers of reports issued respectively.

TABLE I
NUMBERS OF SOIL, PLANT AND FEED SAMPLES RECEIVED

	Feed and Plant Material		Soil					Totals
			Farm		Garden	Greenhouse		
Quarter	Regular	Diagnostic	Regular	Diagnostic	Regular	Regular	Diagnostic	
Jan. 1-Mar. 31	1388	655	997	214	7	71	108	3,440
Apr. 1-Jun. 30	375	840	1428	1915	267	62	132	5,019
July 1-Sept. 30	671	1130	626	3258	162	36	88	5,971
Oct. 1-Dec. 31	1758	464	5661	594	84	34	95	8,690
TOTAL FOR THE YEAR:	4192	3089	8712	5981	520	203	423	
	Total Feed 7,281					Total Soil 15,839		23,120

TABLE II
TYPES OF FEED SAMPLES ANALYZED

	Grain	Hay	Silage
Jan. 1-Mar. 31	432	665	188
Apr. 1-Jun. 30	176	166	28
July 1-Sept. 30	358	264	49
Oct. 1-Dec. 31	714	761	253
TOTAL FOR THE YEAR	1780	1856	518

TABLE III
REPORTS AND RECOMMENDATIONS ISSUED TO FARMERS AND OTHER SUBMITTERS

	Feed and Plant Material		Soil					Totals
			Farm		Garden	Greenhouse		
Quarter	Regular	Diagnostic	Regular	Diagnostic	Regular	Regular	Diagnostic	
Jan. 1-Mar. 31	392	88	223	12	6	32	19	872
Apr. 1-Jun. 30	161	63	387	122	150	23	19	925
July 1-Sept. 30	233	119	115	63	94	16	13	693
Oct. 1-Dec. 31	696	78	1355	60	58	16	16	2,279
TOTAL FOR THE YEAR:	1582	348	2120	257	308	87	67	
	Total Feed 1,930					Total Soil 2,839		4,769

COMPUTER PROGRAM & RECORDS

The computer program provides for the processing of all soil and feed analysis data. Soil test recommendations were provided, while the feed test data were compiled on tape for retrieval. In the past year, these data have been used to locate research sites with specific soil characteristics, to create plant nutrient availability maps of the province and to provide summary and average analysis information for use by the department and other agencies. Maps and summaries of available soil phosphorus, potassium, soil reaction (pH) and sulfur have been prepared.

The computer program section of the branch punched and verified 85,000 cards in 1971.

The installation of the computer terminal has proven beneficial for statistical calculations and for data retrieval in the O. S. Longman Building, through the speed and and versatility of programs available and the convenience of having direct access to the computer in the building.

OTHER ACTIVITIES

A number of papers were presented by branch staff at major meetings and conferences during the year:

(i) "Fertilizer Dealers' Role in Agriculture", D. H. Laverty, 3rd Annual Meeting, Alberta Fertilizer Association, Calgary, February, 1971.

(ii) "Fertilizer Use in the Environment", W. H. Toews, 3rd Annual Meeting, Alberta Fertilizer Association, Calgary, February, 1971.

(iii) "Agriculture and Environmental Improvement", A. W. Goettel, Annual Agricultural Service Board Conference, Edmonton, March, 1971.

(iv) "Soil Erosion and Conservation", A. W. Goettel, Panel Discussion, Unifarm Pollution Seminar, Edmonton, March, 1971.

(v) Is the Assessment of Rural Areas in Line with Economics and Farming Trends in Alberta?", A. W. Goettel, Panel Discussion, 11th Annual Conference, Alberta Assessors Association, Red Deer, April, 1971 and Alberta Association of Municipal Districts and Counties Convention, November, 1971.

(vi) "The Contribution of Nitrogen Fertilizers to Crop Production in Alberta and the Prairies", D. H. Laverty, Alberta Soil Science Workshop, Edmonton, December, 1971.

(vii) "A Comparison of Urea and Ammonium Nitrate Fertilizers", W. H. Toews, Seminar, Department of Soil Science, University of Alberta, November, 1971.

The branch head attended the International Symposium on Identification and Measurement of Environmental Pollutants in Ottawa in June,

1971. A tour of soil research projects was organized in East Central Alberta for agrologists in government and industry. Research on solonetzic soils and nutrient responses of various crops were observed. The Western Canada Fertilizer Association annual conference at Banff was attended by the lab director and branch head.

WEED CONTROL AND FIELD SERVICES BRANCH

W. Lobay, B.Sc., P.Ag., Head

General

Some moisture levels were good to excellent in the spring. Progress in seeding was rapid in southern districts and most central areas, however some delays were experienced in northern districts where cool weather slowed the germination of wild oats and many farmers held back on seeding to get a first good weed kill. Wild oat growth throughout the province was the heaviest in years.

The rains provided good germination and even growth of early seeded crops but prevented much of the weed spraying that was intended, causing weed growth to become heavy.

Over 2.4 million acres were planted to rape, with significant acreage going into stubble fields. Such crops were weedy as many farmers considered suitable selective herbicides expensive, resulting in their very limited use.

Canada and perennial sow thistle were on the increase in 1971; however, there was increased spraying done on roadsides and railways. These weeds caused considerable problems along lakeshores.

Good harvesting conditions cleared many fields early allowing fall spraying and cultivating. Many fallow fields went into winter well worked for weed control.

Weed Inspection and Enforcement

Weed Inspection in Municipal Districts and Counties

The agricultural fieldman force was expanded to 60 full-time fieldmen and 16 full-time assistants. There were also over 100 part-time summer assistants (inspectors) to work with special weed control programs. The fieldmen and their assistants worked through the agricultural service boards organized in each municipality.

Weed Inspection in Improvement Districts
(without Agricultural Service Boards)

There were 7 weed inspectors appointed on a part-time basis in those Improvement Districts where farming was of some significance. The inspectors were hired and supervised by the Weed Control Branch and paid out of the Trust Fund for the Improvement District involved.

Weed Inspection in Urban Areas

There were over 200 weed inspectors employed in urban areas in 1971. In a number of cases municipal weed inspectors were appointed by the urban centres located within the municipality.

For the fourth year in succession weed control schools were conducted to up-date and train rural and urban inspectors in weed indentification, control methods and techniques and were held at Vermilion, Lacombe and Lethbridge. A special school was organized for inspectors in the city of Calgary covering a wide range of information dealing with chemical weed control.

Demonstrations were set out in the outskirts of Edmonton, Red Deer, Calgary and Lethbridge to provide first hand information for city inspectors, on proper use of herbicides for various weed species which were problems in the respective cities.

Regional Plant Industry Supervisors

Regional plant industry supervisors assisted in setting up practical weed control programs including weed control extension activities, working closely with agricultural service boards. About 20-25% of the activities of the regional staff were in weed control.

Official Notices Issued Under the Noxious Weeds Act

The following table shows the number of official notices served by weed authorities to rural landowners in municipalities. The 1964 to 1971 records are listed for comparison of activities:

Year	No. Notices to Destroy Weeds	Acres Affected	No. Notices to Prohibit Seeding	Acres Affected	No. Notices Prohibiting Threshing	No. Court Cases
1964	1,759	35,992	624	24,701	5	10
1965	1,664	43,274	567	20,880	5	3
1966	1,373	38,655	598	15,110	4	3
1967	1,365	42,028	375	17,256	7	1
1968	1,125	41,327	678	17,611	4	1
1969	800	25,647	311	18,581	0	1
1970	1,157	33,212	472	34,775	0	1
1971	1,208	34,832	476	35,074	0	5

Seeding was prohibited on 35,074 acres of cultivated land—a record in the last 8 years. This was due to a more intensive inspection service plus the fact that a significant acreage of this land was unoccupied with owners living outside the province. Also serious weed infestations were not controlled on occupied land as directed by inspectors.

The Noxious Weed Act and Agricultural Service Board Act

There were no amendments made to either of these Acts, administered by this Branch. Work was begun on a complete revision of the Noxious Weeds Act for 1972.

Previous arrangements with the inspection service branch, Attorney General's Department to warn truckers who were scattering weed seeds on numbered highways, were cancelled as the inspection service branch was transferred to the Highways Department. Municipalities were concerned as the onus of responsibility then fell on the shoulders of the local municipal weed inspector.

Weed Surveys

The continuing annual survey by agricultural service boards of the 6 "worst weeds" (persistent perennials) indicated the following approximate infestations on cultivated land:

	1971		
Weed	Farms	Acres	Some Areas Showing Heavy Infestation
Field Bindweed	347	3,800	Lethbridge, Taber
Hoary Cress	200	12,000	Lethbridge, Cardston
Leafy Spurge	200	3,300	Cardston, Provost
Russian Knapweed	57	570	Lethbridge, Claresholm
Toadflax	5,283	71,000	Throughout Province
Bladder Campion	53	636	Throughout Province

New Weeds and Weeds of Increasing Importance

Relatively New Weeds

Stork's-bill (*Erodium cicutarium*) increased in a number of areas in the

Provost-Cadogan region; it was also reported from Stettler. Investigations for control started in 1971.

Black medick (*Medicago lupulina*) was reported from Athabasca and a number of other areas.

Cleavers (*Galium aparine*) increased in the Edmonton and Lacombe areas.

Green foxtail (*Setaria viridis*) increased significantly in the province, particularly in the east-central region.

Cow cockle (*Saponaria vaccaria*) was reported from many sandy fields as well as heavier clay soils.

Persian darnel (*Lolium persicum*) continued to show up as a problem grass weed in parts of Peace River.

Corn spurry (*Spergula arvensis*) was reported from the Lacombe, Edmonton and Morinville regions.

Weeds of Increasing Importance

Canada thistle and perennial sow thistle were reported as weeds of economic concern from all districts. No estimates of extent of infestation were available.

Wild oats—all municipalities reported this weed as of great economic concern. At least 30 districts indicated an increase in this weed. Although there was a significant increase in the use of herbicides Avadex and Carbyne, weather conditions in most areas were very conducive for regrowth of wild oats.

Cleavers—this weed was reported from a number of areas and posed a serious problem in rapeseed fields.

Scentless mayweed—this weed increases yearly in area and intensity.

Other Weed Problems

Numerous other weeds presented problems, the weeds most commonly mentioned were white cockle, narrow-leaved hawk's-beard and tansy.

Chemical Weed Control

Selective Herbicides

There were 6,449,000 acres of cereal crops treated with 2,4-D and MCPA. This was a 24% increase over last year in spite of unfavorable weather during the prime spraying season. The chart below shows the trend in 2,4-D and MCPA use in the period 1960-71.

MCPA and 2,4-D continued to be the main herbicides used. Ester formulations took the lead again; their increase over 1970 was about 30%. Amine formulation use increased also by 18%.

Use of herbicides such as dicamba (Banvel), bromoxynil (Buctril M and Brominal M), dichloroprop (Estaprop), trifluralin (Treflan) doubled in 1971, an indication that farmers were concerned for heavier weed infestations which developed as a result of decreased spraying during the year before.

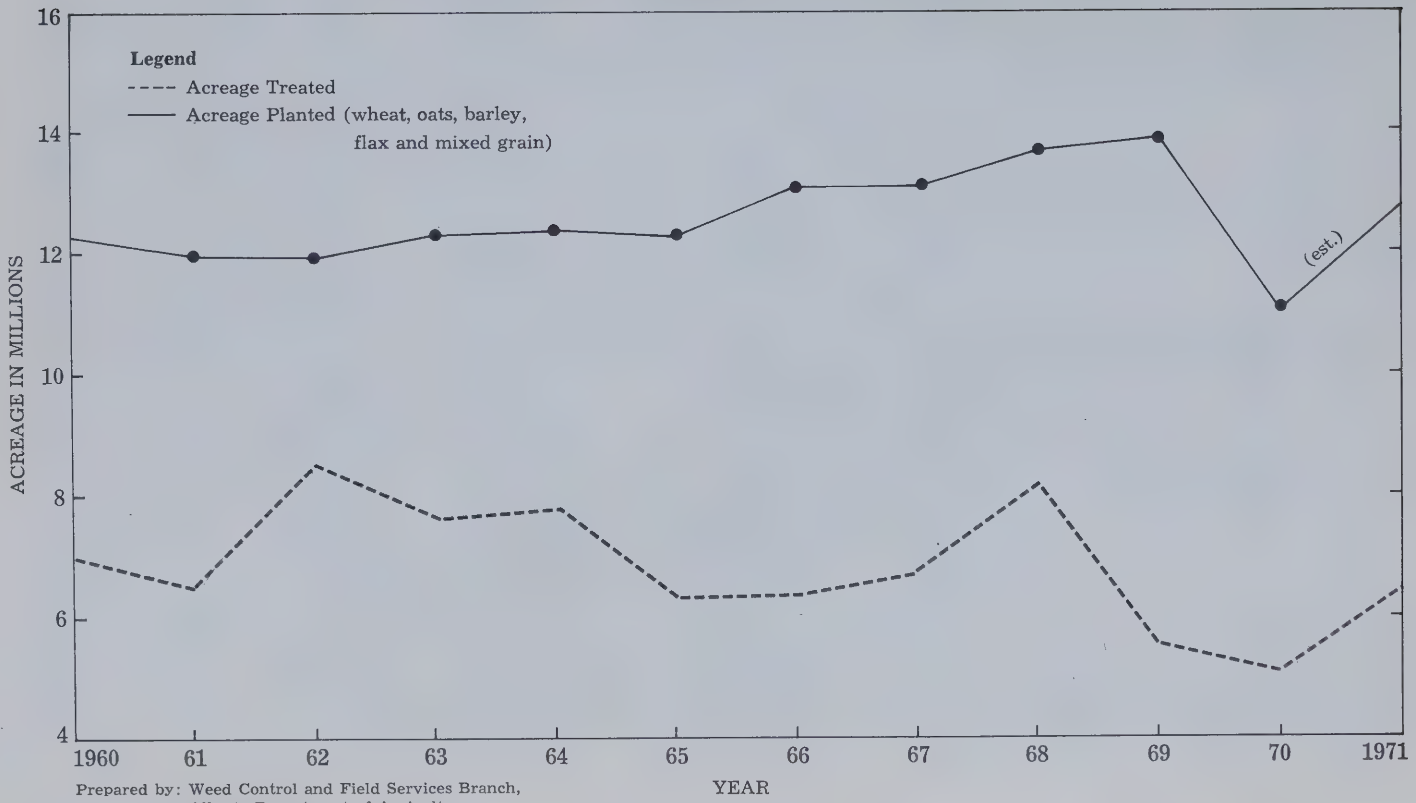
There was also a significant increase in TCA and dalapon use for green foxtail control in resistant crops. Some farmers were using lower rates of TCA and applying it on wheat crops in spite of some sensitivity of this crop to TCA.

There were 486,000 acres treated with wild oat chemicals, barban and diallate compared to 351,000 acres treated in 1970, the first increase in 3 years.

Soil Sterilants in Municipal Weed Control Programs

(1) Soil sterilants continued to be used under a special assistance program to control persistent perennial weeds. The farmer assumed 40% of the cost for materials, equipment and labor with the department sharing 60%. A limit was set as to available funds by the department.

2,4-D AND MCPA USE IN ALBERTA
(1960-71)



Prepared by: Weed Control and Field Services Branch,
Alberta Department of Agriculture
Edmonton 6, Alberta

November 23, 1971

The kind and amount of sterilants used during the last few years is shown below:

Sterilant (Trade Name)	1967 (lb)	1968 (lb)	1969 (lb)	1970 (lb)	1971 (lb)
Sodium Chlorate	188,489	144,750	131,325	40,050	—
D Bor Granular	102,350	92,700	81,900	73,800	—
Polybor Chlorate	23,450	—	—	—	—
Benzabor	1,500	500	1,250	1,950	—
Monobor Chlorate D	61,450	8,850	—	5,544	850
Borolin and Tordon Beads	18,550	7,341	10,005	18,093	7,775
TOTAL	395,789	254,141	224,480	139,437	8,625
Tordon 22K	200 gal	303 gal	1402 gal	511 gal	685 gal
Tordon 212	—	—	—	450 gal	48 gal
Tandex 4G	—	622 lbs	2790 lbs	2430 lbs	1820 lbs
Tandex 80W	—	—	230 lbs	192 lbs	380 lbs

(All the above figures show only the quantity handled by the department and does not include out-right purchases by municipalities and others through retail channels.)

(2) Ten service boards sold selective herbicides to farmers. This number was the same as last year but has been continuously decreasing as local elevators and oil company bulk stations stocked the necessary herbicides for the district and provided good service to the farmer. There was concern by some agricultural service boards that if municipalities did not handle herbicides, prices would increase considerably.

(3) Estimated number of farmer-owned sprayers in Alberta was 26,000. Sprayer schools continued to be conducted. Intensive spraying schools conducted by Gulf Oil Ltd., Allied Chemical Services, and others were of high caliber and were well received by the farmers. Municipal fieldmen calibrated 344 sprayers.

(4) There were 24,931 miles of weeds and 3,649 miles of brush sprayed along municipal roadsides. In addition, 27,479 miles of roadsides were mowed.

Weed Control on Crown Lands

Municipal agricultural fieldmen and Improvement District weed inspectors investigated weed problems on Crown land. Some unoccupied Crown land was leased by adjoining land owners. A total of $3,300 was expended for weed control on vacant Crown land as well as on roadsides along such land.

Roadside Seeding

(a) Municipal Roads

Many municipalities in the province adopted a policy of backsloping and seeding roadsides as a weed control measure. The extent of this program since 1964 is shown by the following figures:

	1966	1967	1968	1969	1970	1971
Miles backsloped and seeded	2,371	2,824	2,379	2,666	1,765	1,346

The department assisted by sharing in the cost of purchasing seed on a 60-40 basis (department of agriculture-municipality respectively).

(b) Government Highways

The Department of Highways continued to expand its program of roadside seeding.

Alberta Weed Advisory Committee

This committee met in early November and (a) discussed weed problems and suggested control measures, (b) considered the Canada Weed Committee recommendations for their adoptions to Alberta conditions, and (c) outlined weed research for the province.

The province submitted the following resolutions and recommendations for consideration by the Alberta Agricultural Co-ordinating Committee (AACC):

(a) that such steps as are necessary be taken to initiate a review of government policy relating to the resale by municipalities of agricultural chemicals to farmers.
(b) that the Dairy and Food Laboratory increase activities for analysis of herbicide residues in soil and plant tissues.
(c) that the Weed Control and Field Services Branch be able to provide to the industrial and urban sectors the same measure of service presently accorded to the agricultural sector.
(d) that picloram, in granular form as well as in liquid form be registered for use as spot treatment on agricultural land in Alberta.
(e) that steps be taken by AACC to ensure that routine grain quality tests are conducted to establish the safety of herbicides in respect to grain and oilseed quality characteristics.

APPLIED RESEARCH

Applied research projects were undertaken to provide information on which to base weed control recommendations in areas where such information was not complete. These projects were established in conjunction with research institutions, agri-business, district agriculturists and agricultural fieldmen as deemed appropriate to ensure maximum benefits and exposure.

SPECIFIC STUDIES

Control of Aquatic Weeds

Excessive growth of aquatic vegetation inhibits the full use of many of Alberta's lakes, ponds, streams and irrigation canals unless control measures are used. The objective of this project was to develop and test recommendable weed control methods. Promising preliminary results were obtained.

Publication: "Control of rooted submergent aquatic vegetation in Lake Wabamun and Lake Isle, Edmonton, Alberta". W. Yarish and J. A. Allan.

Weed Control in Forage Crops

Weed competition in fields growing forage for seed is a major factor limiting development of this phase of agriculture. Studies were undertaken to evaluate several chemical weed control methods on several species of legumes and grasses grown for seed and promising preliminary results were obtained.

Publication: (1) "Control of grasses in alfalfa with RH-315" W. Yarish. Res. Rep. Can. Weed Comm. West. Sect., 1971.

(2) "Control of dandelion in creeping red fescue". W. Yarish, G. W. Miller, and J. W. Paniec. Res. Rep. Can. Weed Comm. West Sect., 1971.

(3) "Control of dandelion in brome". W. Yarish, R. S. Reid and R. W. Nelson. Res. Rep. Can. Weed Comm. West Sect., 1971.

Control of Perennial Weeds

The control of perennial weeds continued to be a major problem since their predominant habitat is non-cultivated low cost land, while eradication methods are quite costly.

Publication: (1) "Control of prickly-pear on rangeland". W. Yarish and W. C. George. Res. Rep. Can. Weed Comm. West. Sect., 1971.

(2) "Control of leafy spurge in grasslands". W. Lobay, S. C. Powers and W. Yarish. Res. Rep. Can. Weed Comm. West. Sect., 1971.

(3) "Distribution of toadflax in the Peace River Region". R. Larson, A. L. Darwent, W. Lobay and W. Yarish. Res. Rep. Can. Weed Comm. West. Sect., 1971.

TCA Residues in Cereals and Flax

Residues of TCA had been detected in the foliage of wheat, barley and oats and the seed of wheat, barley, oats and flax treated with the herbicide. The significance of this residue was examined.

Publication: "TCA residues in cereals and flax". V. W. Kadis, W. Yarish, E. S. Molberg and A. E. Smith. Res. Rep. Can. Weed Comm. West. Sect., 1971.

Control of Weeds Increasing in Importance

The resistance of stork's-bill to commonly used herbicides and rates accounted for its continual spread in the north-eastern part of the province. Work on the evaluation of several herbicides and rates was a major contributing factor to the formulation of a Canada Weed Committee recommendation for its control.

Publication: "Control of Stork's-bill in north-eastern Alberta". W. Yarish, E. L. Treffry and J. W. Paniec. Res. Rep. Can. Weed Comm. West. Sect., 1971.

Weed Control in Shelterbelts

The use of a combination of contact herbicides and soil sterilants produced excellent weed control during the year of application without any detrimental effect to the trees. Further work could lead to another suitable control recommendation.

Publication: "Control of weeds in a green ash shelterbelt". W. Yarish and W. Hamman. Res. Rep. Can. Weed Comm. West. Sect., 1971.

AGRICULTURAL SERVICE BOARDS

Grants were provided to the extent of $11,000 per municipality as the department's share for various plant industry division programs. Grants were shared with municipalities on a 60-40% basis, the 60% being the department share.

Because of more flexibility granted municipalities in expansion programs most needed in their areas, there were 12 municipalities which requested and obtained additional grants on approved projects.

Agreements between the department of agriculture and the 60 service boards provided the following incentive grants for various programs of mutual concern between the municipality and the plant industry division:

1. Assistance for demonstrations and publicity	$ 32,978.00
2. Weed Control and Field Services	340,025.17
3. Soils	49,810.80
4. Crop Protection and Pest Control	27,866.00
5. Field Crops	95,035.00
6. Horticulture	54,314.80

EXTENSION, TRAINING AND OTHER ACTIVITIES

(a) There were 282 field days and 37 tours arranged by agricultural service boards with this branch and regional supervisors participated in 54 of them.

(b) Personnel from this branch spoke at 20 short courses and weed control meetings.

(c) Agricultural chemical schools were organized and held for the seventh consecutive year at a number of centers throughout the province. Total attendance, including farmers, was about 200 persons. Interest in this field has noticeably increased.

(d) Weed control demonstrations assisted by grant funds totalled 150. These involved selective and soil sterilant type herbicides and cultural control methods. Agricultural chemical trade assisted in a number of cases. Demonstrations involving possible picloram use were extensive again. Assessment of performance was done by branch personnel.

(e) A 1-day combined agricultural service board and weed tour in the County of Parkland covered many weed control activities. Over 125 persons attended the tour.

Radio, Television, Publications, Other Releases

(a) Four short radio talks were given in the early spring on commonly used selective herbicides. These were continued until early summer.

(b) One television show was prepared covering weed control on fields, gardens and pastures.

(c) There were 16 press releases prepared for *Farm Notes* (a weekly department of agriculture release) on weed control and related topics.

(d) Th following publications were prepared and printed this year:
   (i) *1971 Weed Control in Cereal and Oilseed Crops.*
   (ii) Mimeograph release on control of weeds in specialty crops.
   (iii) A monthly release entitled *Weed-O-Gram and Service Board Notes* was continued. This publication serves as a vehicle for providing field staff with information on trends and developments in technical and administrative matters, involving Weed Control and Service Board activities.

Conferences and Special Meetings.

(a) Regional Conferences were held at Fairview, Smoky Lake, Morinville, Stettler and Lethbridge.

(b) There was a 1-day Aerial Operators' Course held in April in conjunction with the Pesticide Course held at Olds. This branch was responsible for initiating, setting up the session, and participating.

Weed Identification Service

Most of the weed identification was performed by the plant industry laboratory. In 1971, the following number of specimens were identified: cereal and forage spp.—49; ornamentals—17; vegetables—2; fruits—5; poisonous plants—34; noxious weeds—74; native plants—188; exotic plants—12; miscellaneous plants—11; and unidentified—35.

PROGRAM DEVELOPMENT DIVISION

PROGRAM DEVELOPMENT DIVISION

N. S. Thomson, M.Ag., P.Ag., Director

DIRECTOR'S REPORT

The Program Development Division continued administration and functional direction of the branches and activities reported herein. The activities of the marketing council, marketing commissioner and marketing co-ordinator became more integrated during the past year and are the nucleus of proposed expansion in the marketing area of the department.

The Resource Conservation and Utilization Branch under the direction of Mr. H. W. Thiessen was transferred to the new Department of the Environment leaving only farm consolidation and development activities reported under municipal relations. Late in the year the administration of the Right of Entry Arbitration Act and the Board of Arbitration were transferred from the Department of Mines and Minerals to the Department of Agriculture and placed under the Program Development Division. With the transfer of Water Resources Division to the Department of the Environment, the Land Management Branch joined Program Development Division.

Activity in information systems and retrieval achieved "CAIN" tape cleanup for local use and quite a number of sample runs. The tapes cover the year 1970 and contain approximately 100,000 references. The runs supply references from which titles of interest are indicated and hard copy requested. The 1971 tapes will be purchased for further experimentation and use assessment.

Membership in the Alberta Information Retrieval Association (A.I.R.A.) has resulted in association with many information oriented organizations such as American Society for Information Science (A.S.I.S.) and is an excellent contact for worldwide interests in information technology.

Research activities of the department were reviewed and published in a final document. Final procedure, lists of research activities within the department and co-ordination with A.A.C.C. are to be pursued early in the New Year.

Convening the Conference of Ministers and Deputies of Agriculture was a highlight of the year for the division. The division was also instrumental in convening the department June planning conference and annual department conference. Staff activities such as space, library and budget were included in divisional activity.

The year 1972 may see the demise of the Program Development Division per se. Historically the record indicates a number of achievements for the 5 year life of the division.

1. Development of market philosophy and program in the department.
    a. Marketing Commissioner's role
    b. Marketing Co-ordinator's role
        (i) liaison with commodity groups
        (ii) promotional assistance
        (iii) survey initiation.

2. Development of management philosophy and technique in the department.
    a. Management By Objectives (M.B.O.)
    b. Staff training programs
    c. Regionalization
    d. Staff services technique
    e. Information systems and retrieval
    f. Library initiation.
3. Research and Investigation Development.
    a. Alberta Agricultural Research Trust (A.A.R.T.) participation.
    b. Department impetus in research co-ordination.

AGRICULTURAL PRODUCTS MARKETING COUNCIL

C. H. Ferries, B.S.A., M.S., P.Ag.

The Marketing Council continued to give guidance to persons and commodity groups concerning the use of the Marketing of Agricultural Products Act, and to supervise the operations of boards and commissions that have been established under the Act. Council also heard two appeals by producers pursuant to Section 26 of the Act. There was no change in the composition of Council during 1971.

The decision of the supreme court of Canada in June with respect to "The Attorney General for Manitoba vs. the Manitoba Egg and Poultry Association et al" imposed at least a temporary truce on "the chicken and egg war". At the close of 1971, negotiations were being conducted between provincial governments and poultry boards with an objective of finding a more long term solution through voluntary agreements on market sharing. However on December 30, 1971 the House of Commons passed Bill C-176 (Farm Products Marketing Agencies Act) after it had been amended to have supply management features apply only to poultry and poultry products, and it is expected that the principles discussed with respect to the voluntary agreements will be incorporated under the provisions of Bill C-176.

Plans underway in 1970 to establish a forage seed marketing board have been tabled until such time as further interest is developed.

The Alberta Sheep Council submitted to Council a plan to establish an Alberta Sheep and Wool Commission for promotion, education, and research purposes, as well as to improve marketing methods and quality standards. As 1971 closed, meetings were being held throughout the province to explain the plan and to allow Council to evaluate producer support for the proposed Commission.

Commodities presently regulated to varying degrees under the provisions of the Act include:

1. Producer Boards: vegetables for processing, chicken broilers, turkeys (broilers and heavies), commercial eggs and fowl, and hogs for slaughter.
2. Commissions: potatoes, cattle, fresh vegetables.

AGRICULTURAL MARKETING

C. C. McMurchy, P.Ag.

The Marketing Co-ordinator position was instituted in March, 1971, to develop contacts with producers, farm organizations, industry representatives and others, and to become familiar with the aims and objectives of many divergent groups. In addition to establishing personal contacts with many individuals, many meetings were attended. Some important meetings were those involving the Hog Marketing Board, Alberta Beekeepers' Association, the Poultry Council, Dairy Association, Vegetable Growers, Potato Growers, sheep and beef producers.

In co-operation with Unifarm, two commodity group meetings were called. Two Red Meat Export Council meetings were convened, and meetings were held with a group of southern alfalfa producers who were attempting to establish a hay market in the Fraser Valley. One very productive meeting involved a group of wheat growers who planned to develop a grain dehulling enterprise at Bassano.

In co-operation with the Department of Industry, Trade and Commerce, several meetings were held relative to expanding the province's alfalfa dehydration industry. The marketing section also co-operated with industry and tourism in preparation for a trade mission to Japan and in preparation of an agricultural brochure. Towards the end of the year, a meeting was held with Industry, Trade and Commerce officials regarding an All Canada Trade Fair at Peking, Peoples' Republic of China.

The policy of assisting producer groups and A.D.A. field staff with product promotion and consumer information was continued at a number of fairs, exhibitions and shows throughout the province. In April, the department took delivery of a refrigerated trailer and in spite of the lateness of the season and lack of publicity, the trailer was used to demonstrate beef, poultry and eggs at 22 fairs and 4-H shows during the summer. The refrigerated trailer and another products promotion trailer were used to support a special garden show at the Calgary Exhibition and Stampede and in December was used by the Alberta poultrymen at their provincial show in Calgary.

During the summer, a survey of major restaurants, hotels and institutions in Calgary and Edmonton was undertaken. Through this survey, it is hoped to learn how commodity groups could better supply the present and future needs of this important industry. The results of this survey are presently being compiled.

The year 1971 saw an increase in the number of Japanese trade missions to the province. The marketing section was pleased to participate in several functions staged for such groups while they toured Alberta, and to support the Alberta marketing commissioner wherever possible.

The department provided a small grant to the Beekeepers' Association to assist this group with a publicity and educational program. A small grant was also provided to the Calgary regional offices to assist in staging a vegetable show. Other small supporting grants went to the Lethbridge office to assist in activities relating to the AIC National Convention and towards functions staged for visiting Japanese trade missions.

It is expected that a number of ideas and plans developed through the year by the market development branch will be incorporated into the new marketing division programs.

IRRIGATION SECRETARIAT

J. H. Graham, B.Sc., P.Eng.

OBJECTIVES

The objectives of the Irrigation Secretariat are to effect a sound irrigation policy for the province and irrigation districts and to efficiently administer the province's irrigation program. The manager of the irrigation secretariat is to act as secretary to the Irrigation Council and to establish and maintain communications between the council and the irrigation districts and other persons and organizations dealing with matters relating to irrigation.

THE IRRIGATION ACT

The Irrigation Act was amended in 1969, 1970 and 1971. The 1971 amendment to Section 20 authorizes the making of orders reconstituting irrigation districts. The effect of the amendment is to eliminate the need to show in these orders the names and addresses of the owners and purchasers, if any, of the parcels. This is to facilitate ease of administration by irrigation districts.

IRRIGATION COUNCIL

The Irrigation Act provided for the restructuring of the Irrigation Council which now consists of five members appointed by the Lieutenant Governor in Council. The membership of the council consists of the Hon. Dr. Hugh M. Horner, Minister of Agriculture, as chairman; C. J. McAndrews, Director of Extension and Colleges Division, as vice-chairman; R. E. Bailey, Director of Water Resources Division; N. S. Thomson, Director of Program Development Division and F. J. Brewin of Purple Springs.

J. H. Graham is the secretary to the council and is the manager of the Irrigation Secretariat.

The Irrigation Act makes provision for the irrigation district to enter into agreements with the government of Canada, the government of Alberta or local authorities for the purpose of cost sharing on irrigation rehabilitation programs. This accommodates the action required to reconstruct the physical works in irrigation districts where required, to carry out development of drainage and seepage control and to reconstruct or extend existing districts distribution systems where desirable as proposed and recommended in the report of the Irrigation Policy Committee submitted to the government in 1967.

In accordance with these recommendations, work continued toward establishing an irrigation rehabilitation program and negotiations are being carried on with the federal government towards the development of a cost sharing program. Although final agreement has not been reached, the government of Alberta has entered into cost sharing agreements with the thirteen irrigation districts for the 1971-72 fiscal year for an aggregate sum of $1,162,790.60, 86% of which is provided by the province. This amount covers expenditures for twenty-eight separate projects that have been approved for construction by the Irrigation Council.

LAND MANAGEMENT BRANCH

L. Pollard

During the past year changes were made within some of the departments of the provincial government. The Land Management Branch remained in the Department of Agriculture and has been placed under the direction of the Program Development Division.

The Land Management Branch activities for 1971 followed a pattern similar to previous years, with special emphasis being placed on trying to help the settlers under our program become more stabilized. Financial assistance was given wherever it was deemed most necessary but due to the limited resources, funds were not available to assist all those needing help. It is to be hoped that more funds will be made available for this purpose in the future.

Collections were somewhat slower during the early part of 1971 but the picture changed considerably in the last two or three months, with the result being that an increase of revenue was realized over the previous year.

From all indications and appearances, a general increase in farm income during 1971 was experienced by most of our settlers. Livestock programs continued to expand in many instances.

Historical details of the progress being made are shown in the following statistical summaries:

COLLECTIONS ON LAND SALE AND WATER RIGHT AGREEMENTS

	1967	1968	1969	1970	1971
S.M.R.I.D.					
Land Sale	44,000.00	44,000.00	66,000.00	58,800.00	71,000.00
Water Right	96,000.00	73,000.00	61,000.00	40,800.00	32,200.00
B.R.I.D.					
Land Sale	44,000.00	31,000.00	42,000.00	18,000.00	17,000.00
Water Right	31,000.00	24,000.00	28,000.00	12,300.00	17,200.00

SETTLERS IN AREARS

	Land		Water Right	
Year	Number	Amount	Number	Amount
S.M.R.I.D.				
1967	69	159,663.19	51	13,495.70
1968	65	175,836.85	52	13,031.97
1969	58	175,681.21	43	10,170.21
1970	64	199,802.45	44	10,374.79
1971	56	197,320.74	28	6,943.34
B.R.I.D.				
1967	40	85,848.91	37	10,030.28
1968	32	82,634.85	27	7,107.98
1969	32	77,774.27	30	9,652.23
1970	30	87,420.84	25	7,837.74
1971	29	99,931.05	24	7,985.88

WATER RIGHTS AGREEMENTS

S.M.R.I.D.

Year	Active Agreements	Agreements Paid Up	Number In Arrears	Amount of Arrears
1967	902*	940	517	60,186.26†
1968	732**	1,191	497	54,192.38††
1969	438***	1,371	317	42,125.64†††
1970	293	1,517	108	17,561.05
1971	205	1,616	71	12,521.63

* Includes 102 Water Right Agreements
** Includes 120 Interim Water Right Agreements
*** Includes 37 Water Right Agreements
† Includes 50 Interim Water Right Agreements In Arrears
†† Includes 77 Interim Water Right Agreements In Arrears
††† Includes 37 Interim Water Right Agreements In Arrears

B.R.I.D.

Year	Active Agreements	Agreements Paid Up	Number In Arrears	Amount of Arrears
1967	287	64	93	9,398.46
1968	271	83	118	12,282.74
1969	224	153	111	11,877.34
1970	204	170	78	13,226.27
1971	143	234	33	7,634.76

S.M.R.I.D., B.R.I.D. AND HAYS

	1967	1968	1969	1970	1971
Settlers Established	303	308	310	317	322
Quitclaimed, Withdrawals, Cancelled	61	61	61	61	61
Total Number of Purchase Agreements	393	406	410	426	433
Agreements Paid Up	169	186	202	211	219
Active Agreements	163	159	147	154	153
Additional Parcels Allotted	65	73	75	83	85
Parcels of Land Remaining	102	93	91	87	81
Unsettled	(*31-CP)	(*31-CP)	(*31-CP)	(*31-CP)	(*31-CP)
Number of Parcels of Leased Lands	102	93	91	87	81

(*CP refers to lands reserved for Community Pasture development)

MUNICIPAL RELATIONS BRANCH

J. R. Gylander, B.S.A., P.Ag.

AGRICULTURAL SERVICE BOARDS

A total of 60 boards were in operation during the year with the establishment of a new board in I.D. 15. In addition, a board was formed as a pilot project on the Morley Indian Reserve.

Agreements were completed with all boards indicating an agricultural program at the municipal level of $1,786,067. Of this total the contribution by the Department of Agriculture in the form of grants amounted to an estimated $960,000. A notable innovation was introduced in this year's agreements whereby complete flexibility was provided in the use of grants for all plant industry programs.

The practice, initiated in 1970, whereby all agreements are channelled through the regional office was continued. This has resulted in improved programs at the local level to service regional and local needs.

Co-ordination and liaison was effected in the main by one day regional agricultural service board meetings and the provincial conference and by the services provided on a program basis by the various Department of Agriculture regional specialists. In addition the branch was involved in several meetings with the executive of the Alberta Association of Municipal Districts and Counties and close liaison was maintained with the Agricultural Fieldmen Association. The Department of Agriculture 'desk' was again maintained throughout the municipal convention as another avenue of communication.

A one week in-service training course was organized for agricultural fieldmen and was held at the Olds College in February.

The use of advisory committees to serve municipal councils and extension personnel is now well established and twenty-three committees were in operation in 1971. Their effectiveness is largely related to the degree of understanding possessed by committee members as to their role. A number of successful training seminars for committees were carried out by the leadership training branch of the extension division.

AGRICULTURAL SOCIETIES

Classified fairs were held by the following in 1971:

'A' Class—Calgary, Edmonton, Lethbridge, Medicine Hat, Red Deer.

'B' Class—Camrose, Grande Prairie, Lloydminster, Olds, Vegreville, Vermilion.

'C' Class—Battle River, Manning, Benalto, Larwell, Lougheed, Mayerthorpe, Millarville, Peace River, Pincher Creek, Smoky River (Girouxville), Stettler, Vauxhall, Westlock, Wildwood, and Willingdon.

Agricultural Societies operating unclassified fairs or other activities were: Athabasca, Alix, Barrhead, Big Country (Oyen), Bonnyville, Carmangay, Cardston, Central Alberta (Lacombe), Drumheller, Eaglesham, East-Central Alberta (Coronation), Fairview, Hanna, High Level, High River, Lamont, Nanton, Okotoks, Provost, Rimbey, Rocky Mountain House, Spirit River, St. Paul, Taber, Victoria Trail, Willow Creek (Claresholm), Valleyview.

Included in the activities organized or sponsored by these agricultural societies were bench shows, community fairs, horticultural shows, livestock shows and sales, seed fairs and agricultural short courses.

Charters were issued to four new societies—Eaglesham, Big Country (Oyen), Tofield and Elk Point.

The Edmonton Exhibition Association's was the only application during the year for a loan guarantee under the provisions of the Agricultural Societies Act. The extent of the guarantee to date for all Agricultural Societies and Exhibitions totals $1,315,300.

The annual meeting of the Alberta Agricultural Societies Association was held in Edmonton in March at which time Mr. G. R. Lougheed of Benalto was re-elected president. Most societies reported activities and finances on a par with previous years. Those in smaller centers report some difficulty in maintaining interest in fairs and all societies have problems in maintaining buildings unless such facilities are used on a multi-purpose basis throughout the year.

The preservation of a meaningful agricultural aspect at fairs continues to be a problem in Alberta as it is all across Canada. The trend at the larger shows in Alberta is a decline in emphasis on competitions in favour of displays and demonstrations. The Edmonton Exhibition featured "Design for Living", a series of displays and demonstrations in arts and crafts in place of the conventional exhibits in cooking, sewing and handicrafts entered in competition. Also in Edmonton, the "Land of Milk and Honey" highlighted these two farm products by way of educational displays and demonstrations. At the Calgary Exhibition it was "Gardening is Groovy" to highlight horticulture following the themes of Beef and Dairying in previous years. The Lethbridge Exhibition made a noteworthy change in 1971 by eliminating all competitive exhibits at the summer fair. This was the first major show in Western Canada to break with tradition to this extent. To serve the interests of livestock producers a successful winter show and sale of purebred and commercial cattle was held in December.

Another development at Alberta fairs is the accent on consumer interest and marketing in relation to agriculture products. Many of the fairs, both large and small, featured food booths and demonstrations in which the district home economist played an active role.

In all of these innovations department staff at all levels provided support in planning and staging the events.

Capital grants to agricultural societies, as part of the governments Priority Employment Program, were made available by the Department of Agriculture. These grants were awarded for the construction or renovation of multi-purpose buildings for community use with priority given to areas with an unemployment problem. A total of $800,000 was made available and at the close of the year 15 societies had made application.

FARM CONSOLIDATION PROGRAM

This program, which was formerly administered by the Resource Conservation and Utilization Branch, was transferred to the Municipal Relations Branch during the year.

The program provides for the purchase of land from those who voluntarily desire to leave the farm and who have been unable to sell their property privately. The prime criteria for purchases are old age, health, non-economic farm size, retraining of farm operator and saving of government services. Land purchases were primarily restricted to Census Division 12, Census Division 14, and Census Division 15.

Advisory services are provided by a total of 15 local Farm Development Committees (formerly Farm Adjustment Committees). Personnel in the Lands Branch in the Department of Lands and Forests are closely allied to and are an integral part of this program.

This program has been very well received and the applications received this year far exceed those of previous years. A total of 170 parcels were purchased during the year at a cost of $1,042,475. This compares to 115 parcels at a cost of $602,176 in 1970.

LAND IMPROVEMENTS AND DEVELOPMENT PROGRAM

This program was applicable in Census Division 14 only and was available on a selective basis as part of the total rural development program.

Applications Filed	Approved	Improvements	Guaranteed Loans Issued
20	15	1,769 acreas clearing 1,250 acres breaking 466 acres other	$47,507.00

AGRICULTURAL MANPOWER PROGRAMS

W. M. Bayda, B.S.A., P.Ag.

Good acceptance has been achieved with the longer farm management courses, which are now being supported by Canada Manpower.

These courses are of one month and over, five hours a day, five days a week. Allowances are paid.

Last year 712 farmers were trained under this program. This required 25,030 training days.

This year the program has been increased to train 1,140 farmers and provide 38,200 training days. This is an increase of 34 percent in training days.

In addition, courses of shorter duration are being offered by the Extension Division without any assistance from the federal government. Greater flexibility exists for arranging these shorter courses.

Training on-the-job has been introduced for the first time in 1971 by the federal government. It is hoped that this program will provide the needed training for farm workers, who are now being taken on without any prior experience or training.

Agricultural training for native people has not progressed very satisfactorily. With increased agricultural development on reserves, agricultural training is badly needed to complement this activity.

Shortage of seasonal workers for sugar beet hoeing and thinning is a recurring provincial concern. A real scarcity of seasonal workers is becoming very apparent.

The Indian and Metis people are the preferred workers for this kind of employment. Abuse of housing by seasonal workers is still a common concern among growers.

Nine hundred and four seasonal workers were brought to Lethbridge by the government this year. This was a considerable increase over the 683 adults of last year.

Many seasonal workers came to work in the sugar beet fields without any government assistance. However, in 1971, there was an unexpected decrease in these workers.

Grants to individual growers to improve seasonal housing for workers is now being well accepted. About $40,000 in housing grants will be paid out during the 1971-72 fiscal year.

During the year, some foreign labor has been brought into the province to work on farms. There have been 58 Japanese, 68 Tibetans and a large number of workers who came through the International Agricultural Exchange Association.

VETERINARY SERVICES DIVISION

VETERINARY SERVICES DIVISION

J. G. O'Donoghue, D.V.M., Director

Laboratory and field workloads reflected the increased livestock numbers and the dollar investment they represented.

The pilot veterinary clinic at Fairview experienced minor financial problems but appeared to have been well received by the livestock owners. Service demands approached the limits of capability of the one veterinary practitioner.

Time was given to the continued study of the basic problem of providing veterinary service to all livestock producers.

The occurrence of laryngotracheitis in epidemic proportions in the Fraser Valley in April led to restrictions being placed on the movement of poultry and eggs into Alberta from British Columbia. This province remained free of the disease and less restrictive measurers remained in force at the year's end.

Abortion in cattle was a major cause of concern. In some 350 herds, losses as high as 60% of the calf crop were reported. The virus of infectious bovine rhinotracheitis was identified as the cause on 151 premises. Unusual calf losses initiated a major investigation into what is popularly referred to as the "weak calf" syndrome.

Rabies continued from the fall of 1970 to April 1971 and was diagnosed in 7 coyotes, 7 bovines, 2 skunks, and 2 dogs. There was reason to believe that the joint control efforts of Agriculture, Lands and Forests, and Federal veterinarians were successful. Later, three additional diagnoses were made in bats, a species that presents a different epidemiological situation.

The Guaranteed Loan Policy for mink ranchers was renewed for 1971. Rising market prices at the December sales, the first for the 1971 crop, added a note of optimism.

The Division met the requests for service in all matters related to veterinary medicine and, where applicable, to human health. Of particular note were investigations into salmonellosis in the poultry industry and the identification of triaryl phosphate poisoning in cattle that originated with a high temperature lubricant from a natural gas pumping station.

The co-operation and assistance of other Divisions, Departments, and Agencies are gratefully acknowledged.

FIELD SERVICES

Extension and field activities included administration of official legislative programs such as livestock inspection, communicable disease control, herd health programs and livestock medicine control. It involved laboratory as well as field services staff. Specific disease outbreaks and pollution problems involving livestock were investigated. Additional responsibilities included lectures at the universities, vocational colleges and Canada Manpower courses, as well as instructional short courses on animal health problems for farmers organized by the Extension Division.

SUMMARY OF ACTIVITIES

Field Investigations	
Cattle	35
Swine	6
Sheep	4
Horses	1
Poultry	13
Fur	151
Others	3
Total	213

Meetings and Short Courses	
Domestic Animals	63
Poultry	64
Professional	6
Community Pastures	12
Fur Breeders	20
Regional	9
Clinic	7
Others	17
Total	138

Inspections	
Markets	177
Stockyards	309
Livestock Medicine	348
Slaughterhouses	110
S.H.H.P.	205
R.O.P.	104
Swine Sale	95
Pastures	16
Bull Studs	3
Total	1,367

Lectures	
University	29
Vocational Colleges	22
Canada Manpower (days)	13
Others	5
Total	69

COMMUNICABLE DISEASE CONTROL

The voluntary vaccination of heifer calves under the brucellosis program continued to decline, with 41,768 calves vaccinated.

Infectious bovine rhinotracheitis caused widespread outbreaks of abortion in cattle herds throughout the province. Since this disease appears in many forms, it necessitated numerous farm meetings to describe the disease more fully to farmers and ranchers. Euine infectious anemia and encephalomyelitis were reported along with several cases of foot rot in sheep.

Cattle and sheep were inspected on entry to 19 community pastures totalling 37,163 animals. Deaths and sickness in 71 cattle and 8 sheep were investigated by veterinary practitioners. The rigid inspection of sheep entering the pastures greatly reduced the incidence of foot rot from the level of the previous year.

The veterinary clinic at Fairview operated successfully with maintenance grants from the department. The purchase of essential equipment for the clinic was authorized by the government in the latter part of the year.

LIVESTOCK INSPECTION

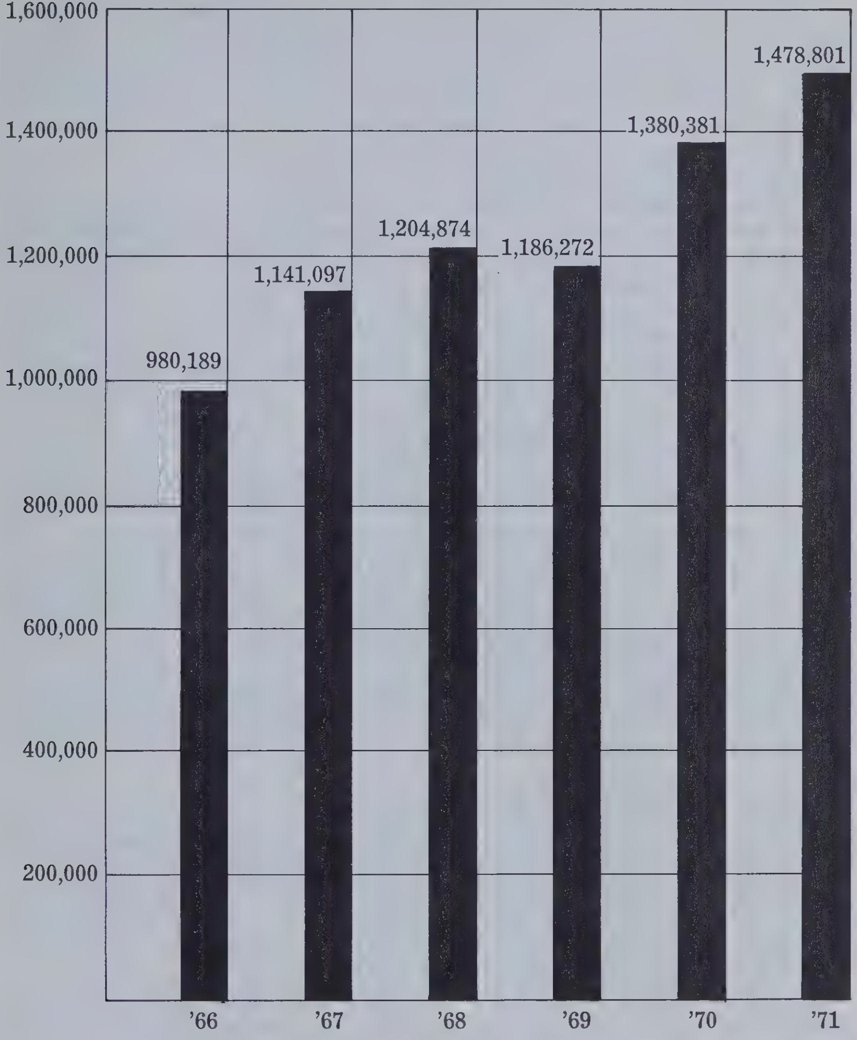
The accompanying graph illustrates the total volume of livestock inspected at Class "D", "E" and "F" stockyards from 1966 to 1971 inclusive. Of the 1,478,801 inspected in 1971, 24,838 were rejected as not suitable for unconditional sale. This required 4,968 man days of work by participating veterinarians.

Construction and sanitary inspections were supplied to 23 Class "C" and 145 Class "G" stockyards. The number of Class "G" stockyards operating has declined steadily from 1967 when 246 were under supervision.

SWINE HERD HEALTH PROGRAM

An increased enrollment was again achieved during 1971 and regular quarterly inspections were maintained on all enrolled herds. Interest in the program was demonstrated by many larger commercial units, and of those participating, one contained nearly 5,000 pigs. One herd attained certi-

LIVESTOCK INSPECTED AT CLASS "D", "E", AND "F" STOCKYARDS



fied status during the year. A project was set up in conjunction with a new unit stocked with a major importation of pigs from England.

Summary of Activities of Swine Herd Health Program during 1971:

Enrollment at January 1, 1971	52
Herd inspections	206
Necropsies performed	122
Specimens examined	808
Enrollment at year end	58

R.O.P. (SWINE) HEALTH INSPECTIONS

One hundred and four farm visits were made to keep all herds participating in the R.O.P. program under semi-annual inspection. Market specimens were checked in the laboratory on completion of each group test and, if necessary, specimens were collected from the farm to confirm or refute suspicion of disease. One herd was thus cleared and allowed to station test pigs but two herds were rejected.

SWINE SALE INSPECTIONS

Veterinary inspection of all herds contributing to the major provincial swine sales continued with a total of 95 inspections being carried out. On three occasions, a health certificate was not issued because of clinical evidence of infectious disease.

CALGARY QUALITY MILK CONTROL PROGRAM

Regular committee meetings were attended and advice was given regarding mastitis prevention and control.

LIVESTOCK MEDICINE REGULATIONS

Licences were issued to four hundred and forty-three outlets, an increase of 10 over the previous year. Three hundred and forty-eight inspections of licenced outlets and 21 of premises of new applicants were made.

One outlet was reported for selling a restricted drug and was given a written warning and a wholesale company was investigated for advertising. A number of complaints of a minor nature were investigated and corrected.

Licences to sell poultry disease vaccines were issued to 8 pharmacists, 7 hatcheries and 8 veterinarians.

Under the rabies control program, specimen containers and literature were supplied to control points to help insure that suspected animals were submitted for examination.

ABATTOIRS AND HUMANE SLAUGHTER

Ninety-nine licences were issued under the Humane Slaughter Regulations, 93 of these to abattoirs already licensed as locker plants or specialized processing plants. Three were issued to businesses operating an abattoir only and 3 to educatioinal institutions offering instruction in slaughtering procedures. One hundred and seven abattoirs were inspected and one investigation was conducted regarding slaughter of rabbits.

A survey to determine the incidence of trichinosis in Alberta was completed in 1971. Eight hundred and thirty-one samples from 51 abattoirs representing 594 farms were collected and examined. All were negative.

EMERGENCY PLANNING OFFICER

Two annexes of the resources book were updated and emergency assignments of personnel reviewed.

Eight emergency government areas prepared agricultural annexes to their plans and ten more are being prepared.

Eleven departmental personnel and four part-t-ime employees attended emergency planning courses at Arnprior.

Three departmental personnel participated in Exercise Barnex I at Camrose.

LABORATORY SERVICES

Alberta's highly developed livestock industry requires an equally highly developed system of veterinary field and laboratory services to protect it from disease losses. The laboratories at Edmonton, Lethbridge and Fairview provide specialized diagnostic services which cannot be given in the field. Veterinary practitioners use the laboratories to identify new diseases, assist in diagnosis of problem cases, or to confirm a tentative diagnosis. Stockmen, wildlife biologists and others use the services to establish a diagnosis.

A very careful examination of dead animals or birds is necessary to find the factors which caused death or disease. As research increases our knowledge of diseases, an increasing number of laboratory tests are sometimes required to make use of this new knowledge. In addition to the pathologist's examination, tests may include: bacteriology, virology, toxicology, tissue sections, and many others. Speed in completing these tests and reporting them to the veterinarian or owner is essential to prevent heavy losses by implementing the best treatment and control for the particular disease or diseases.

The Fairview laboratory completed its first full year of service. While well over 1,000 animals and birds were examined, our facilities have a capacity for many more specimens and we anticipate more will be received as stockmen in the Peace River district become aware of the service available.

In addition to the work in the laboratory, staff visited many farms in response to requests from veterinarians or stockmen for this type of investigation of disease problems.

In addition to the responsibilities to agriculture, our toxicology section serviced the medical profession, health units, police departments and other departments of government by carrying out chemical analyses related to the work of these agencies. Analyses involved mainly cases of suspected poisoning and non-medical drug use, but again included analysis on many game birds for mercury residues.

Laboratory services administer the staff of the shared services section which provides pickup and delivery, mail, duplicating services, etc. to all other laboratories in the Longman Building.

Dr. W. N. Harries studied pathology at the University of London and was awarded an M.Sc. degree in diagnostic pathology. Dr. R. G. Christian became a member of the American College of Veterinary Pathologists.

The table and figure below illustrates the continued increase in use of the services we provide. The greatest increase was at Lethbridge.

SPECIMENS EXAMINED (by laboratory sections)

	No. Specimens Examined		
EDMONTON	1969	1970	1971
Animal	10,747	13,430	13,872
Poultry	7,724	12,919	18,675
Microbiology	12,972	15,493	16,976
Histopathology	15,527	18,058	21,973
Parasitology	879	1,527	1,682
Toxicology	13,410	14,033	12,042
LETHBRIDGE			
Animal	2,641	2,629	3,837
Poultry	1,199	2,314	2,054
Microbiology	2,449	2,823	3,104
Histopathology	2,596	3,626	3,511

FAIRVIEW			
Animal	0	7	1,877
Poultry	0	1	250
Microbiology	0	7	1,725
Histopathology	0	57	2,336
TOTALS	70,144	86,924	103,905

Following is a list of species and number of specimens of each received and examined.

		Edmonton	Lethbridge	Fairview
Cattle		5,903	2,491	620
Swine		4,203	577	344
Sheep		390	180	267
Horse		272	83	75
Dog		1,125	217	127
Cat		310	101	28
Fur		223	30	4
Wildlife		578	158	55
Chickens		5,855	1,712	220
Turkeys		1,513	279	22
Bloods	avian	10,573	16	
	animal	169	566	
Milk		2,575	196	360
Others	avian	734	145	5
	animal	799	867	2
Total		35,222	7,618	2,129
			GRAND TOTAL	44,969

(Figures do not include toxicology section or specimens referred from one laboratory section to another)

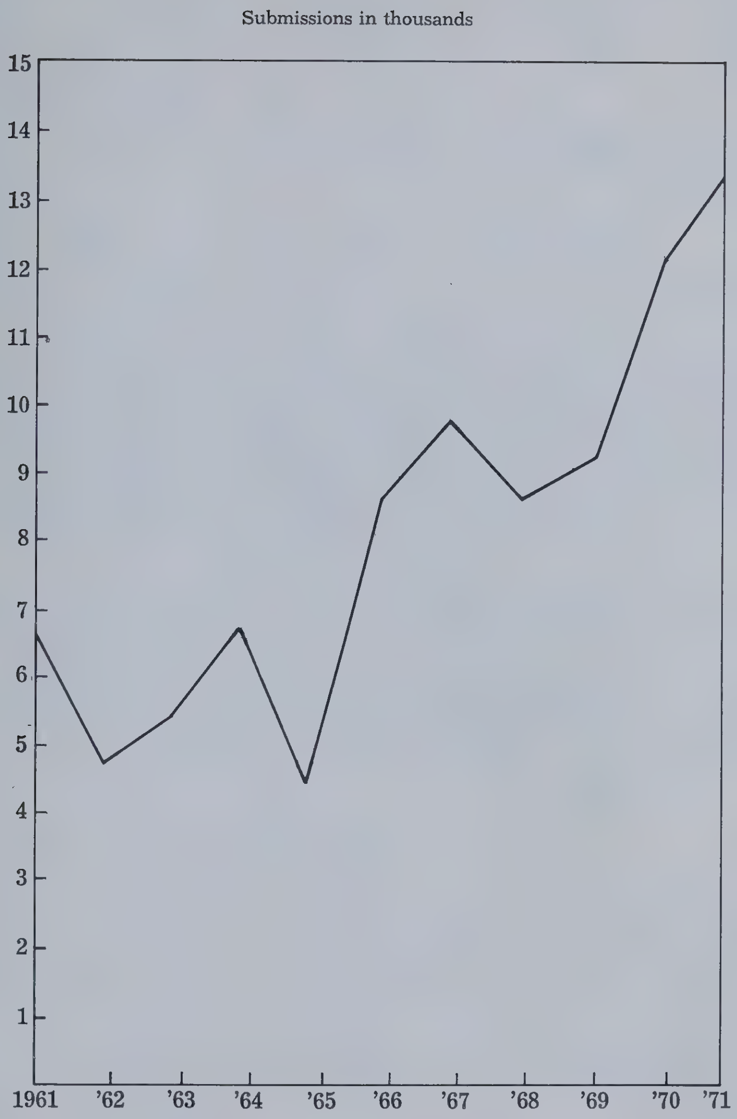
TOXICOLOGY SECTION

The laboratory performs chemical analyses for the provincial veterinary services, as well as for various health and government agencies of the province, including police forces, and on a limited scale for individuals and industries.

The total number of specimens processed during the year 1971 was 12,158. Two thousand and seventy-five samples of human tissues and body fluids were analyzed for hospitals, coroners and police forces (from live patients and post mortem cases). Also analyzed were 1,348 animal tissues and body fluids. The presence of toxic substances was investigated in 129 feed samples.

Water analyses were performed on 4,937 samples to determine suitability for human consumption, irrigation and industrial purposes for health units, veterinary services and individuals. Of these 466 were analyzed for trace components.

Six hundred and forty-two specimens and exhibits were tested for R.C.M.P. and local police forces. These were of a very large variety and involved complex chemical and physico-chemical examinations. The head of the laboratory appeared at court hearings on 71 occasions.



"Submission" refers to a shipment received from an individual farm or case. Each submission may be composed of several "specimens" i.e., tissues, blood, or milk samples, etc.

PROMINENT DISEASES—Cattle

Disease	Edmonton	Lethbridge	Fairview
Abortions (all causes)	861	180	21
Blackleg	38	3	
Bloat	46	37	14
Coccidiosis	26	7	7
Colibacillosis	115	27	
Hemophilus meningoencephalitis	30		
Inf. bov. rhinotracheitis	30	12	
Johne's disease	2		
Lungworm infection	10		4
Malignant edema	36		2
Pneumonia (infectious)	291	96	18
(atypical interstitial)	9	4	18
Poisoning	55	22	11
Polioencephalomalacia	30	11	
Virus diarrhea	15	12	2
Vitamin A deficiency	71	18	

Exceptionally high abortion rates occurred in some herds due to I.B.R. infection. Many meetings were addressed at which vaccination against this disease was recommended. There were reports of herds with many calves weak at birth or becoming weak soon after birth. A questionnaire was circulated and farms were visited in an attempt to determine the extent and causes of calf losses. While we did find some problem herds the extent was not severe enough to affect the overall calf crop of the province. Calf scours, shipping fever, and other types of pneumonia continued as the major disease problems. Twenty-four cases of Hemophilus meningoencephalitis, by far the highest incidence of the disease seen in Alberta to date, were diagnosed in the first two weeks of December. White muscle disease continued as a problem and we do not yet know the full extent of its economic importance. Coccidiosis appears to be increasing in frequency, especially in feed lot calves.

PROMINENT DISEASES—Swine

Disease	Edmonton	Lethbridge	Fairview
Abortions (all causes)	38	11	
Anemia	5	18	
Atrophic rhinitis	28	5	6
Colibacillosis	104	62	36
Edema disease	11	1	1
Encephalitis	26	1	
Enteritis	147	5	21
Erysipelas	111	22	14
Gastro-enteritis	3		
Infectious serositis	4	1	
Mulberry heart disease	28	5	1
Necrotic enteritis	16	1	
Pneumonia	131	47	16
Vibrionic dysentery	45	7	6

The major diseases causing death were erysipelas and colibacillosis, both of which are bacterial infections. Swine dysentry was also a disease of great economic importance although it does not cause as many deaths. Mulberry heart disease continued to be a significant factor. Gastric ulcers caused heavy losses in at least one herd. Poor nutrition and parasites were responsible for very poor production efficiency in many herds.

PROMINENT DISEASES—Poultry

Disease	Edmonton	Lethbridge	Fairview
Air sac infection	33	18	3
Arizona paracolon	23	8	
Ascites and edema	16	10	
Aspergillosis	22		1
Avian encephalomyelitis	11		5
Capillaria worms	40	1	2
Coccidiosis	132	21	8
Coliform septicemia	33	14	
Deficiencies	26	4	12
Fowl cholera	19	3	1
Leukosis—lymphoid	139	6	3
—Marek's	349	65	9
Omphalitis			11
Salmonellosis	30	2	
Tibial chondrodystrophy	23	3	

While the figures for Marek's disease increased over the previous year, the vaccine introduced during the year appears to be quite effective and should result in a decline in incidence of the industry's major disease problem.

Air sac infection in turkeys was less common but infectious sinusitis in older birds was seen for the first time in some years. Arizona paracolon and edema again caused significant losses. There were many cases of coccidiosis mainly affecting pullet flocks. An encouraging note is the reduction in coli septicemia or CRD diagnoses.

SPECIAL INVESTIGATIONS

MERCURY ANALYSIS

Increasing demand for reliable, highly sensitive analytical methods for the quantitative measurement of trace amounts of mercury in the environment has resulted in the development of a flameless atomic absorption photometer for mercury determination. The detection limit of this instrument, 0.2 nanogram mercury, is comparable with that of the best research instrument reported in the literature.

MAREK'S DISEASE VACCINE TRIALS

Marek's disease has caused losses in excess of 30% in some pullet flocks and has been the cause of most serious losses to the poultry industry. A trial of a recently released vaccine was undertaken jointly by the Veterinary Services Division, the Department of Animal Science of the University of Alberta and the Poultry Branch of the Animal Industry Division. All casualties were examined especially for Marek's disease at the Veterinary Services laboratory and over 500 sera were sent for further study to Connaught Medical Laboratories. The mortality from Marek's disease over a six month period was 0.89% and 0.67% in vaccinated groups and 5.1% in unvaccinated controls.

INVESTIGATION INTO A SUSPECTED NEW SYNDROME IN CHICKEN BROILERS

At the request of a feed company an investigation was undertaken to study an alleged new syndrome. Material from affected birds was given by mouth to healthy broiler chickens. A similar number of healthy chickens were kept as controls. Treated and untreated birds increased in weight at similar satisfactory rates. There was no evidence of disease.

INVESTIGATION INTO EXCESSIVE CULLS IN A PULLET FLOCK

The cause of excess cull birds in a growing pullet flock was investigated. Unusual microscopic pathological changes were noted in the intestines. These changes may be permanent since they were present in affected birds kept in the laboratory for a four week period. The cause has not been found in spite of searches for pathogenic bacteria, viruses or protozoa. When ground up intestines from infected birds were inoculated by mouth in chickens, their growth rate was depressed compared with uninoculated controls.

WEAK CALF SYNDROME

Questionnaires were sent to all veterinarians and livestock branch specialists. From the information in the returns herds were selected for further investigations. Twenty-three cattlemen were visited and interviewed. While a definite diagnosis could not be established in some cases, the herds were categorized into types of disease as shown below:

Scours	10
Selenium responsive	4
Other nutritional	3
Viral infection (pre-natal)	4
Genetic	2

The work did not substantiate reports of unusually extensive and heavy calf losses.

OSTEODYSTROPHY IN LAMBS

Concentrate-fed lambs may die with a relatively unknown clinical syndrome as a result of very low serum calcium levels. Investigation revealed that early detection of imbalance can be carried out by measuring urine phosphorus. Affected lambs have poor growth and feed efficiency.

HEMOPHILUS MENINGOENCEPHALITIS IN CATTLE

A study of the biochemical characteristics of several isolates was carried out.

COPPER DEFICIENCIES IN CATTLE

In cooperation with the federal research stations at Beaverlodge and Prince George it was found that levels of copper in feed generally considered deficient are actually adequate for cattle.

WHITE MUSCLE DISEASE

The geographical incidence of cases in both aborted calves and lambs, and young calves and lambs was mapped and indicated widespread occurrence in region seven.

COCCIDIOSIS IN FEEDER LAMBS

A survey was carried out to determine incidence and significant levels of infestation. Amprolium will be tried next spring as a means of prevention.

TRICHINOSIS

A survey to determine the incidence of trichinosis in Alberta swine, which began in 1970, was completed in 1971. Samples were obtained from 51 abattoirs scattered widely across the province. Eight hundred and thirty-one samples from 594 different farms were collected and submitted to the veterinary laboratory for examination. Samples were examined by a press technique and also by digestion. All samples were negative.

SALMONELLOSIS

In co-operation with the Provincial Laboratory of Public Health testing programs to determine contamination and infection with these bacteria were conducted. Salmonella organisms are important in both human and animal health.

FETAL IODINE DEFICIENCY

Bovine fetuses from a local packing plant were surveyed for gross and microscopic evidence of goiter. Approximately 14% of fetuses examined were found to be affected.

GASTRIC ULCERS, SWINE

Investigations were made into the nature and significance of a variety of disease conditions.

NEONATAL LUNG PATHOLOGY IN THE OVINE

The literature was surveyed for information on development, birth changes and diseases of the lung. Most data were derived from human sources and these were then applied to neonatal ovine lungs which had been collected during a mortality survey at an intensively reared sheep operation near Lethbridge.

TRIARYL PHOSPHATE POISONING

A number of post mortem examinations and several field trips were made in an effort to diagnose this poisoning. Because of the lack of knowledge and description of the condition in cattle a dosage trial has been undertaken for the purpose of determining the neurotoxic dose and describing the neuropathological lesions as they occur in experimental, as opposed to field, cases of poisoned animals.

SPIROCHETE INVOLVEMENT IN SWINE DYSENTERY

An examination of the flora of the colon of pigs suffering from swine dysentery has revealed the same morphological types as those described in the English and Danish literature. These spirochetes have been implicated in swine dysentery; however, their significance has yet to be determined.

PUBLICATIONS

(1) "A modified Cold Vapor Atomic Absorption Method for the Determination of Mercury" K. I. Strausz and J. E. Roff. Report of the Sixth Pesticide Residue Analysis Seminar (Western Canada) 1971.
(2) "Chlorine Gas Poisoning in Farm Livestock": Case Report and Review. D. W. MacDonald, M. A. Lamoureux, M. Van den Brink, G. R. Whenham and W. P. Brisbane. Can. Vet. Jour. 12:2 February 1971.
(3) "Listeria Monocytogenes Isolations in Alberta 1951-1970". D. W. MacDonald, G. S. Wilton, J. Howell and G. G. Klavano. Accepted by Can. Vet. Jour. for publication.
(4) "Lead Poisoning in Cattle: Brain Lesions and Hematologic Changes" R. G. Christian and L. Tryphonas. American Journal of Veterinary Research, 1971, 32: 203-216.
(5) "Accidental Intracarotid Artery Injection of Promazine in the Horse" R. G. Christian, L. L. Kramer and J. H. L. Mills. Canadian Veterinary Journal (in press).
(6) "Tibial Dyschondroplasia in Broiler Chickens in Western Canada" C. Riddell, J. Howell and M. M. Kaye. Avian Diseases, Vol. 15 (1971) 557-565.

FUR FARMS BRANCH

Three hundred and thirty-five fur farm licences were issued, of which 101 were for mink, 229 for chinchilla and 5 for miscellaneous fur bearers. Twenty-nine mink farmers ceased operations during the year, largely due to the depressed pelt prices.

The guaranteed interim assistance loans policy for mink farmers was extended by O.C. 363/71 and many mink breeders were able to keep operating in anticipation of improved markets.

Dr. Rendle E. Bowness of Toronto was the featured speaker at fall meetings held in four mink farming areas. A two-week Canada Manpower Course was arranged for Lesser Slave Lake district mink farmers in February.

Three bulletins were published and numerous meetings of fur breeders attended including the annual meeting of the Canada Mink Breeders in Regina.

The rabbit processing plant in Calgary was still in financial difficulty and may close.

Promotion of chinchillas ceased to be a problem in Alberta.

SUMMARY OF STATISTICS

	Licenses Issued			Mink Pelts	Mink Pelt
Year	Chinchilla	Misc.	Mink	Produced	Value
1970-71	229	5	101	135,023	1,409,595
1969-70	240	7	130	189,796	1,971,822
1968-69	257	5	155	170,540	2,478,213
1967-68	245	2	184	201,444	2,765,672

Early December sales indicated an increase of 15 to 25% in pelt prices and a trend toward a healthier industry.

WHEAT BOARD MONIES TRUST
THE ALBERTA MILK CONTROL
CO-OPERATIVE ACTIVITIES & CREDIT UNION BRANCH

WHEAT BOARD MONIES TRUST

REPORT OF THE BOARD OF TRUSTEES OF THE SURPLUS WHEAT BOARD MONEY RECEIVED BY THE GOVERNMENT OF THE PROVINCE OF ALBERTA FROM 1916-19 CANADIAN WHEAT BOARD

MEMBERS

Honorable H. A. Ruste—Minister of Agriculture, Chairman
Orlen G. Bratvold—Director, Plant Ind. Division, Member
Hugh M. Thompson—Olds, Alberta, Member
Minot L. Stetson—Edmonton, Alberta, Member
Robert H. McMillan—Department Executive Secretary—Secretary

During the year ending December 31, 1971, receipts from term deposits and interest on investments were $8,379.37. Accrued earnings at this date from term deposits and interest on investments were $3,667.87.

Disbursements during the year amounted to $4,400.00 being payments of scholarships and bursaries.

A meeting of the Board of Trustees was held on June 21, 1971. Scholarships and bursaries to be awarded during the fiscal year 1971-72 were approved in the amount of $5,100.00. The Board has continued the policy of conserving the principal in the Trust Fund, making all payments from income received on investments.

A vacancy occurred on the Board in 1971, in the person of Robert H. McMillan, who retired from government service. A replacement was not appointed during the year 1971. The Hon. Dr. Hugh Horner assumed the position of chairman upon becoming Minister of Agriculture.

Treasury Department
Wheat Board Monies Trust Fund
Balance Sheet
December 31, 1971

ASSETS

CURRENT ASSETS		
Cash in Bank	$ 4,417.62	
Term Deposit (at cost)	45,000.00	
Interest Receivable	3,667.87	$ 53,085.49
INVESTMENTS		
Gov't of Canada 3 3/4 Jan. 15/78	$ 2,504.00	
Prov. of Sask. 5 1/2 Feb. 15/82	4,982.23	
A.G.T. 6% April 15/92	45,000.00	
Prov. of Newfoundland 3 3/4 June 1/76	4,000.00	
City of Edmonton 8 June 19/73	5,000.00	
Alta. Resources Railway 7 1/2 Aug. 1/73	5,000.00	
Universities Comm. 7 Dec. 1/92	7,934.56	74,420.79
TOTAL ASSETS		$127,506.28

LIABILITIES

Trust Fund December 31, 1970	$124,528.39
Surplus for Year Ending December 31, 1971	2,977.89
	$127,506.28

Note: Market value of Term Deposit at December 31, 1971 is $41,909.20.

TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
ACCRUED EARNINGS AS AT DECEMBER 31, 1971

Government of Canada Debentures					
$ 2,500.00	3¾%	January 15, 1978	5½ Months		$ 42.97
Province of Saskatchewan Debentures					
$ 5,000.00	5½%	February 15, 1982	4½ Months		$ 103.12
Alberta Government Telephones Debentures					
$45,000.00	6%	April 15, 1992	2½ Months		$ 562.50
Province of Newfoundland Debentures					
$ 4,000.00	3¾%	June 1, 1976	1 Month		$ 12.50
City of Edmonton Investment Certificate					
$ 5,000.00	8%	June 19, 1973	194 days		$ 212.60
Alberta Resources Railway Debentures					
$ 5,000.00	7½%	August 1, 1973	5 Months		$ 156.25
University Commission Debentures					
$ 8,000.00	7%	December 1, 1992	1 Month		$ 46.67
$74,500.00					
Bank Interest					
November 1971			$4,512.62 @ 2%	7.50	
December 1971			4,417.62 @ 2%	7.42	14.92
Add: Accrued Amortization of Discount					
Province of Saskatchewan				.78	
University Commission				.30	1.08
Less: Accrued Amortization of Premium					
Government of Canada				.55	.55
Accrued Earnings December 31, 1971					1,152.06
Accrued Interest on Term Deposits $45,000.00 at 5.7% for 358 days					2,515.81
				Total	$3,667.87

Treasury Department
Wheat Board Monies Trust Fund
Statement of Receipts and Disbursements
For the Year Ending December 31, 1971

Bank Balance December 31, 1970			$ 438.25
Receipts:			
Interest on	$ 2,500	Canada's 3¾ Jan. 15/78	$ 93.74	
	5,000	Alberta Resources Railway 7½	375.00	
	5,000	Prov. of Sask. Feb. 15/82	275.00	
	45,000	A.G.T. 6% April 15/92	2,700.00	
	4,000	Prov. Newfoundland 3¾	150.00	
	8,000	Universities Commission	560.00	
	45,000	U.S. Swap	3,597.90	
		City of Edmonton Invest. Cert.	400.00	
		Bank Balances	77.73	
Redeposit Duplicate Payment to Olds College			150.00	
Redemption of U.S. Swap			45,000.00	53,379.37
				$53,817.62
Disbursements:				
Scholarships to		—Olds Agricultural College	650.00	
		—Trinity Christian College	150.00	
		—Fairview Agricultural College	600.00	
		—Vermilion Agricultural College	600.00	
		—Red Deer College	150.00	
		—University of Calgary	150.00	
		—Northern Alberta Institute of Tech.	300.00	
		—University of Alberta	1,350.00	
		—Calgary General Hospital	150.00	
		—University of Lethbridge	150.00	
		—Camrose Lutheran College	150.00	
Purchase U.S. Swap			45,000.00	49,400.00
Bank Balance December 31, 1971				$ 4,417.62

THE ALBERTA MILK CONTROL BOARD

S. H. Thomas, B.S.A., Chairman
J. M. Bentley, B.Comm., Member
T. A. Petersen, Ph.D., Member

The Milk Board held one formal and four semi-formal hearings. The full board met on five occasions and an additional four partial meetings were held.

Legislation consisted of Bill 111, An Act to Amend the Milk Control Act, being assented to April 27, 1971. This amendment was necessary to enable Alberta to participate in a national plan for Milk Market Sharing. Alberta Regulation 67/71 being Milk Control Regulations under the Milk Control Act complimented regulations made by the Public Utilities Board.

In accordance with the Milk Control Act, the Public Utilities Board held price hearings throughout the province and, effective August 16, 1971, ordered new minimum prices for consumer schedules.

A meeting of the chairmen of the four western provincial Milk Boards was held in conjunction with the annual meeting of the National Dairy Council. The Milk Board maintains an active membership in the International Association of Milk Control Agencies.

The Milk Board continued support both active and financial in the Dairy Cost Survey and the local Milk Foundations throughout the province.

The Milk Board is charged with the responsibility of ascertaining the wishes of Alberta milk and cream producers regarding a national plan for Milk Market Sharing. Plans are under way for conducting a producer registration and vote early in 1972.

The process of standardizing accounting procedures throughout the Province has been encouraging. The audit program has proven to be of value to all parties concerned.

Total sales of all fluid products by Controlled Area Processors were 124,605,017 quarts as compared to 121,252,166 quarts in 1970, an increase of 2.8%. Milk production from producers supplying these areas was 390,487,090 pounds against 370,217,881 pounds in 1970 an increase of 5.5%.

TABLE 1
NUMBER OF MILK PRODUCERS AND DISTRIBUTORS OPERATING ON DECEMBER 31, 1971, UNDER THE ALBERTA MILK CONTROL BOARD LICENCE

	1971 Producers	1971 Distributors	1970 Producers	1970 Distributors	1969 Producers	1969 Distributors
Calgary	250	4	245	4	233	5
Camrose	6	2	5	2	5	2
Crowsnest Pass	4	1	4	1	4	1
Edmonton	428	5	435	5	410	5
Lethbridge	39	2	35	2	37	2
Medicine Hat	14	2	14	2	18	2
Ponoka	5	1	5	1	5	1
Red Deer	10	4	16	4	15	4
	756	21	759	21	727	22
Average Daily Shipment Per Producer	1415		1336		1263	

TABLE 2

FLUID MILK CONSUMPTION—1967-1971—IN QUARTS

(Standard, Homo, 2%, Egg Nog, Skim, Chocolate & Buttermilk)

Area	1971	1970	1969	1968	1967
Southern Area	10,295,629	9,931,474			
Crowsnest Pass			484,129	436,832	461,590
Lethbridge			4,034,858	3,764,688	3,532,477
Medicine Hat			2,407,144	2,280,352	2,168,355
Calgary Area	45,918,105	44,252,513	36,844,883	34,526,387	32,729,330
Central Area	6,343,485	5,930,054			
Camrose			812,519	823,925	827,288
Ponoka			740,368	728,819	677,124
Red Deer			3,258,116	3,284,108	2,990,697
Edmonton Area	56,485,727	55,426,635	47,919,170	44,445,396	42,458,862
Total All Areas	119,042,946	115,540,676	96,501,187	90,290,507	85,845,723

Note: Sales by individual areas during 1967-69 include urban sales only.

TABLE 3

FLUID CREAM CONSUMPTION—1967-1971—IN QUARTS

Area	1971	1970	1969	1968	1967
Southern Area	419,185	420,511			
Crowsnest Pass			3,777	2,290	2,809
Lethbridge			201,729	206,765	201,259
Medicine Hat			119,684	119,835	117,224
Calgary Area	2,069,887	2,082,887	1,817,707	1,810,353	1,805,402
Central Area	250,044	237,995			
Camrose			42,061	44,045	43,289
Ponoka			21,549	23,963	25,602
Red Deer			123,061	125,947	120,839
Edmonton Area	2,822,955	2,970,097	2,841,782	2,946,666	2,759,277
Total All Areas	5,562,071	5,711,490	5,171,350	5,279,864	5,075,701
Total in B.F. Equivalent—lbs.	1,877,199	1,927,628	1,745,331	1,781,954	1,713,049

Note: Sales by individual areas during 1967-69 include urban sales only.

TABLE 4

FLUID MILK PURCHASES BY DISTRIBUTING PLANTS, 1967-1971 IN QUARTS

Area	1971	1970	1969	1968	1967
Southern	40,998,151	39,262,531	36,508,000	35,746,000	34,392,900
Calgary	141,365,350	132,711,164	118,833,167	122,291,321	118,788,246
Central	14,538,961	16,325,901	14,256,943	14,296,397	13,969,997
Edmonton	193,584,628	181,918,285	166,079,069	167,495,841	167,398,728
Total All Areas	390,487,090	370,217,881	335,677,179	339,829,559	334,549,871

CO-OPERATIVE ACTIVITIES AND CREDIT UNION BRANCH

H. W. Webber, B.Sc., Director

The Co-operative Activities and Credit Union Branch is a recent addition to the Department of Agriculture having been transferred from the Department of Industry and Tourism on November 4, 1971.

During 1971, the Alberta Power Commission Act was repealed and the Power Commission was phased out as of May 31. The staff of the Alberta Power Commission was integrated into that of the Co-operative Activities and Credit Union Branch and, while the two branches had worked closely together in connection with the administration of the Rural Electrification Revolving Fund Act, the integration allowed some duplication to be eliminated and provided greater efficiency.

The branch was reorganized to allow more flexibility of operation.

Mr. H. P. Cameron, B.Sc., P.Eng. who was acting chairman of the Alberta Power Commission has been appointed as assistant director.

The branch has been set up under four supervisors as follows:

Credit Unions—Mr. H. M. Eklund.
Rural Electrification and Natural Gas—Mr. L. Collins, B.Sc.
Native Co-operative Development—Mr. Roland Hiller.
Co-operative Administration—Mr. G. H. Heath, B.Sc.

CREDIT UNIONS

There were no new credit union charters issued during 1971. Nine amalgamations were effected and four dissolutions took place, leaving a total of 235 active credit unions. Even though the number of credit unions operating in the province continued to decline the number of members being served had increased by over 18,000 during the last 12 months. Ten credit unions were operating branch offices at year end.

The Credit Union Federation of Alberta, Limited has received tremendous support from both credit unions and co-operatives in the province and held assets of 27 million dollars at the end of the year. This was an increase of more than 11 million dollars and provided a strong central fund for members to draw on from time to time to cover their seasonal needs.

The Credit Union Stabilization Plan continued to assist credit unions who required financial aid or management guidance. The assets held in liquid investments amounted to $1,509,403, which was an increase of $272,044 contributed by the movement this past year. The trustees who administer the Fund have arranged through the federation for a full-time supervisor to handle the volume of requests being received.

In summary, the credit union movement in Alberta continued to show healthy gains in all facets of the operation, with an increase in assets of over 39 million dollars. This has been an average gain of over 3 million dollars per month, however, the increase for the last quarter has been in excess of 4 million dollars per month. The trend towards offering a complete financial service to the member has resulted in 11 credit unions going into member chequing this year, bringing the total number of credit unions operating negotiable order systems to 69. There are 105 credit unions that have been in business for over 25 years, since the first charter was issued in 1938.

EXAMINATIONS

The branch conducted 77 supplemental examinations in 1971 in conjunction with audits performed by chartered accountants.

EXAMINATIONS COMPLETED

		1970		1971	
Northern Office	Regular	82		63	
	Supplemental	38	120	35	98
Southern Office	Regular	93		86	
	Supplemental	44	137	42	128
	TOTAL		257		226

CREDIT UNION STATISTICS

The disposition of the 453 Charters issued to December 31, 1971 is as follows:

		1970		1971	
Active Credit Unions	Northern area	114		107	
	Southern area	134	248	128	235
Inactive	Northern area	3		3	
	Southern area	2	5	2	5
Dissolved since 1938			153		157
Amalgamated since 1938			42		51
			448		448
Charter numbers cancelled and not issued at Registrar's Office			5		5
Last Charter Number issued			453		453

CLASSIFICATION OF CREDIT UNIONS

	Active	Inactive	New and Not Reporting	Federations	Total
1969	257	5	1	1	264
1970	248	5	0	1	254
1971	235	5	0	1	241

Type	Classification	Dec. 31/69	Dec. 31/70	Dec. 31/71
1	Industrial	66	64	62
2	Government	30	31	32
3	Parochial	25	25	24
4	Associational	22	21	18
5	Urban Community	30	28	25
7	Urban Rural Community	90	84	79
8	Federations	1	1	1
	Totals	264	254	241

Total Assets	Northern Alberta		Southern Alberta		Total	
	1970	1971	1970	1971	1970	1971
UNDER $ 100,000	46	38	57	46	103	84
100 to $ 250,000	17	18	30	33	47	51
250 to $ 500,000	18	11	14	14	32	25
500 to $1,000,000	11	19	18	14	29	33
1M to $2,000,000	10	5	12	15	22	20
2M to $3,000,000	6	5	0	3	6	8
3M to $4,000,000	2	4	2	1	4	5
4M to $5,000,000	3	4	1	1	4	5
OVER $5,000,000	1	3	0	1	1	4
Total Active Credit Unions	114	107	134	128	248	235

ASSETS

	As at Oct. 31 '70	As at Oct. 31 '71
Cash on Hand	$ 239,170.50	$ 361,281.68
Cash in Federation	2,070,944.43	3,451,841.72
Cash in Chartered Banks	1,345,492.91	2,248,569.25
Cash in Treasury Branch	685,278.09	964,541.94
Cash in Trust Companies	178,045.56	Nil
Shares in Federation & Other Credit Unions	1,943,970.46	2,051,485.12
Deposits in Federation & Trust Companies	12,777,613.65	22,847,679.37
Government of Canada Bonds	660,886.82	677,520.13
Provincial Debentures	714,230.03	615,588.30
Municipal Debentures	233,358.68	235,231.22
Stabilization Investment	1,250,623.02	1,542,237.59
Loans	105,983,467.63	131,473,273.07
Buildings	2,542,742.08	2,823,960.10
Land	828,612.96	982,542.04
Furniture & Fixtures	915,161.84	1,001,901.25
Others	1,151,511.06	2,019,152.98
TOTAL ASSETS	$133,521,109.72	$173,296,805.76

LIABILITIES

Federation Loans	$ 8,545,528.93	$ 5,552,015.68
Bank Loans	432,829.92	496,197.62
Treasury Branch Loans	380,000.00	88,000.00
Bills Payable	1,228,450.97	1,683,279.32
Shares	66,659,367.48	75,675,318.30
Current Deposits	13,868,105.36	17,292,216.27
Term Deposits	32,848,119.23	61,682,540.99
Net Endowment Shares	327,513.90	283,355.48
Guaranty Reserve	3,047,814.66	3,572,188.28
Stabilization Reserve	1,253,043.41	1,543,564.46
Education Reserve	19,858.66	26,557.97
General Reserve	969,703.23	815,049.82
Undivided Earnings	524,041.89	583,406.23
Profit and Loss	3,416,732.08	4,003,115.34
TOTAL LIABILITIES	$133,521,109.72	$173,296,805.76

	Oct./69	Oct./70	Oct./71
Average Member's Share Holdings	$446.65	$433.91	$ 437,62
Average Member's Savings	$677.37	$736.52	$ 895.95
Average Assets Per Member	$798.15	$864.89	$1,002.14
Percentage of Loans to Assets	81.2%	79.4%	75.9%
Percentage of Liquid Assets	14.1%	15.6%	20.2%

ALBERTA CREDIT UNIONS

2-Year Statistical Comparison

	1970 Amount	Increase 12 Months	%	1971 Amount	Increase 12 Months	%
Assets	$133,521,109	$ 17,488,036	15.07	$173,296,806	$39,775,696	29.78
Share Capital	$ 66,986,881	$ 2,054,293	3.16	$ 75,958,674	$ 8,971,792	13.39
Deposits	$ 46,716,224	$ 13,174,557	39.28	$ 78,974,757	$32,258,533	69.05
Loans Outstanding	$105,983,467	$ 11,758,122	12.48	$131,473,273	$25,789,805	24.33
Investments	$ 17,580,692	$ 3,706,890	26.71	$ 25,908,257	$ 8,327,574	47.36
Cash	$ 4,518,931	$ 996,366	28.29	$ 7,026,235	$ 2,507,303	55.48
Guaranty Reserve Fund	$ 3,047,815	$ 443,983	17.05	$ 3,572,188	$ 524,374	17.20
Stabilization Reserve	$ 1,253,043	$ 220,261	21.32	$ 1,543,564	$ 290,521	23.18
Loans Since Inception	$571,271,539	$ 76,294,278	15.41	$634,772,104	$63,500,565	11.11
Membership	154,378	9,011	6.19	172,926	18,548	12.01
Loans Made Previous 12 months	$ 76,294,278	$ 13,504,191	21.50	$ 63,500,565	($12,793,713)	16.77*
Loans Repaid Previous 12 months	$ 64,536,156	$ 13,269,440	25.88	$ 88,990,372	$24,454,216	37.89
Credit Union Federation of Alberta, Limited—Assets	$ 15,787,497	$ 3,050,649	21.83	$ 27,740,604	$11,953,107	75.71

*Denotes Decrease

RURAL ELECTRIFICATION AND NATURAL GAS

Rural electrification in Alberta has been financed and developed through the setting up of Rural Electrification Associations under the Co-operative Associations Act since 1947.

The sum of $6,784,464.85 was guaranteed by the provincial treasurer for this purpose. Of the amount, only $155.16 remained outstanding at year end.

Since 1953, with the setting up of the Rural Electrification Revolving Fund Act, almost all of the financing for the extension of rural power projects has been from this fund.

The following table points out the financial picture and the progress made in this connection since the first loan was granted June 1, 1953.

RURAL ELECTRIFICATION—1971

Loans made January 1, 1971 to December 31, 1971	
Revolving Fund Part I	600,468.34
Revolving Fund Part II	24,140.00
Long Term Financing Act	1,136,991.65
Total loans made during 1971	1,761,599.99
Amounts outstanding as at December 31, 1971, are as follows:	
Revolving Fund Part I	3,732,145.23
Revolving Fund Part II	186,990.26
Long Term Financing Act	10,173,297.95
	14,092,433.44
Repayments on loans during 1971 were as follows:	
Revolving Fund Part I	1,352,964.32
Revolving Fund Part II	29,367.34
Long Term Financing Act	1,475,405.70
	2,857,737.36
Interest returned to General Revenue January 1, 1971 to December 31, 1971	618,747.60

Since inception on June 1, 1953 to December 31, 1971 the total amount loaned from the Rural Electrification Revolving Fund has been $60,067,280.70.

The capital cost of R.E.A. lines built in the province is 64.5 million dollars.

There have been 64,375 farms electrified with the help of the financial assistance made possible by these two Acts. In addition, many hamlets and commercial services in areas served by farm lines were enabled to obtain central station power much sooner than would otherwise have been the case.

Natural Gas Co-operatives have created a great deal of interest within the province during the past year. Financial assistance under provisions of the Co-operative Marketing Associations Guarantee Act has amounted to over 3.6 million dollars in total, with $458,602.56 being guaranteed in 1971.

With the increasing number of gas transmission lines, and the availability of supply direct from wells in many areas, more and more farm homes will avail themselves of this desirable fuel.

NATIVE CO-OPERATIVES

Activities in the native co-operative development field have increased as indicated by the forty new co-operatives incorporated during 1971 which constituted half of the total co-operatives incorporated by our branch for the year 1971. At year end there were 86 native co-operatives registered with our department. This increase was due to the Native Co-operative Guarantee Act, since it provided the main source of financing for native groups. The contingent liability under this Act, as of December 31st, was approximately $3,250,000.00; the maximum allowable under the Act is $5,000,000.00.

Three co-operative development officers were hired during the year—one was a replacement, the others were additional staff. At year end the staff consisted of a supervisor and seven co-operative development officers. Two officers were located at Fort Macleod, one at Slave Lake, one at Peace River and the remaining three worked out of the Edmonton office.

The city of Edmonton was the site of our annual conference held during September to discuss the problems arising in the various areas. There are a number of problems facing the native co-operatives. One of the major problems is the management of highly competitive enterprises such as retail stores and logging enterprises, etc. These ventures are relatively new to the native groups therefore difficulty can be expected in management. Another problem is the lack of equity capital that these people can raise in their groups. As a rule 100% of their capital is being financed and therefore the interest expense is greater than normal business ventures can bear.

The native cattle co-operatives have developed very quickly in Southern Alberta, specifically on the Blood and Blackfoot Reserves, since they have some of the better grazing land in Alberta at their disposal. The two original co-operatives incorporated, one on each reserve, were designed as multi-purpose co-operatives. The multi-purpose co-operatives are a complex operation requiring excellent member participation and top level management. Unfortunately the idea of "Instant Dividends" was used as a selling point in the initial membership drive. As "Instant Success" did not follow, interest waned in the co-operative and coupled with the lack of good management and financial control, these two co-operatives were very nearly forced into liquidation in the spring of 1971. Fortunately, there were a few determined members that didn't wish to see this happen. With the assistance of the co-operative development officers, these two co-operatives have tightened their budgets and operated within those budgets which meant that they were able to make substantial payments on their loans. In the case of one of the co-operatives, they had received a deferment of their payments until the fall of 1972 but they chose, rather than pay additional interest for a year, to make the 1972 payment in 1971.

The native people are responsible for the formation of the so-called "Ten Member" cattle co-operatives. Generally these co-operatives are groups of ten members working togther as a co-operative in a cow-calf operation. The members will purchase their cow herd co-operatively, with a certain number being allocated to each member to care for on his farm, and will sell the calves in the name of the co-operative until the loan is completely paid. The main objective in limiting the size of the co-operative is to get a group that is able to work harmoniously and often involves families more than individual members because the branch limits the amount of the loan to $10,000.00 per family unit. We wish to stress that under this program there is a possibility of improving the family's position and involving some of the sons and daughters as well as the parents. There are two of these co-operatives that do operate their herd from a central location.

During the year co-operatives have been formed to act as agents in acquiring land leases from the Department of Lands and Forests to be leased to their members for home sites, garden areas, etc. This enables the people to have a legal body that is able to negotiate with the Department of Lands and Forests to acquire land that will be held in the name of the co-operatives. These leases with the Department of Lands and Forests will be of long term duration in order that there will be a stable community in the area.

CO-OPERATIVE ADMINISTRATION

All other co-operatives numbering in total approximately 387 are grouped together for administrative purposes.

Supervision of these associations is not as detailed as hoped although there is a great deal of inter-relationship with other branches of the department and with outside agencies.

CONSUMER CO-OPERATIVES

Stores, supermarkets and the U.F.A. are included in this section and they shared a very substantial increase in sales over last year. Part of this was due to the updating of reports for the Edmonton and Calgary supermarkets. Sales in practically all larger outlets were up substantially—far more than that accountable to inflation. This would indicate greater concern by consumers for some control over what their dollars will buy including quality, pricing, gimmicks, etc. The Calgary Co-op has opened its sixth supermarket serving the southwest corner of the city and Edmonton has started on its second large shopping centre which will serve south Edmonton and Sherwood Park.

DAIRY AND POULTRY

Dairy and poultry sales were practically identical to last year.

LIVESTOCK CO-OPERATIVES

There was a substantial increase in the various types of co-operatives outlets as only cattle and sheep were marketed. This was the first full year that the Hog Marketing Board had been in operation selling 2,032,288 hogs for a total value of $70,102,638.

LIVESTOCK FEEDERS

Livestock feeders were reported this year on a different basis with more accuracy. About 17 million dollars were loaned under guarantee and directly by lending agencies.

SEED AND GRAIN

Sixty-seven seed cleaning plants along with the two large Pools showed a substantial increase over last year and approached the peak year of 1967.

OTHER CO-OPERATIVES

There was a substantial increase in the many various types of co-operatives included in this section as well as their total sales. Inflation accounted for a large part of this increase.

CO-OPERATIVES IN ALBERTA

	1969	1970	1971
Total No. of Associations	1165	1193	1203
Total No. of Credit Unions	259	253	235
Total Co-operatives other than Credit Unions	906	940	968

Types of Co-operatives registered:

	1970	No. of new Co-ops 1971	Strike-Offs	Total To Date	Inactive
Rural Electrifications	385	—	5	380	—
Consumer	99	2	3	98	11
Grain & Seed	79	5	—	84	20
Livestock Feeders	50	6	—	56	9
Livestock Marketing	35	20	—	55	13
Artificial Breeding	13	—	—	13	2
Dairy & Poultry	17	—	—	17	7
Community & Recreational	22	—	1	21	5
Fire Prevention	17	1	1	17	3
Farming (including Grazing)	32	3	—	35	13
Gas—Natural & Propane	46	12	1	57	10
Real Estate	6	—	—	6	—
Farm Machinery	10	—	—	10	—
Sundry/Misc.	129	31	6	119	37
	940	80	17	968	130
Credit Unions	253	—	13	235	5
	1,193	80	30	1,203	135

STATISTICS 1970-71

Units Reporting		Business Done	Assets	Net Worth	Surplus	Members
83	Consumer	110,866,977	51,578,996	23,852,217	4,331,701	181,109
22	Livestock	38,988,853	1,572,341	707,964	20,698	17,982
47	Feeders	16,927,419	9,240,466	279,767	26,671	2,581
10	Dairy & Poultry	64,182,170	22,433,621	8,762,059	842,713	22,748
55	Seed & Grain	212,994,330*	121,850,253	48,468,458	5,642,304	91,573
143	Sundry	65,288,750*	47,763,819	5,668,815	1,268,390	12,542
385	Rural Electrification	12,637,036*	64,472,000	50,567,000		59,506
235	Credit Unions	63,500,565	173,296,806	10,543,882	4,586,522	172,303
		585,386,100	492,208,302	148,850,162	16,718,999	560,344

*This figure does not include construction costs (for 1971 of $1,761,560) as it has in previous years.

ASSOCIATIONS REGISTERED UNDER THE CO-OPERATIVE ASSOCIATIONS ACT IN 1971

No. 1508	January 19/71	P.P.M. Lumber Co-op Ltd., Paddle Prairie, Alta.
No. 1509	February 4/71	Wanyandie Flats Co-operative Limited, Grande Cache, Alta.
No. 1510	February 10/71	Worsley and District Co-operative Seed Cleaning Plant Limited, Fairview
No. 1511	February 17, 1971	Olds Community Development Co-operative Association Ltd., Olds
No. 1512	February 22, 1971	Bow Valley Feeders Ass'n Ltd., Rainier
No. 1513	February 22/71	Community Media Co-operative Ltd., Edmonton
No. 1514	February 22, 1971	Villeneuve Co-operative Enterprises, Paddle Prairie, Alta.
No. 1515	March 3/71	Bullhorn Cattle Co-op Enterprizes, Cardston
No. 1516	March 19/71	Community Service Co-operative Associations Ltd, Edmonton
No. 1517	March 25/71	Bow River Cattle Co-operative, Gleichen
No. 1518	March 25/71	Westland Property Co-op Limited, Edmonton
No. 1519	March 19/71	Prairie Cattle Co-operative Limited, Cardston
No. 1520	April 2/71	C. & A. Gas Co-op Ltd., Brooks
No. 1521	April 2/71	Orkney Gas Co-op Ltd., Three Hills
No. 1522	April 2/71	Big Timber Cattle Co-op Ltd., Cardston
No. 1523	April 2/71	Cadotte Lake Co-operative Association Limited, Cadotte Lake
No. 1524	April 2/71	Westlock Feeders Association Ltd., Westlock
No. 1525	April 6/71	Pembina River Natural Gas Co-op Ltd., Jarvie
No. 1526	April 16/71	Strome Gas Co-op Ltd., Strome
No. 1527	April 16/71	Lomond Agri Co-op Limited, Lomond
No. 1528	April 27/71	West Blackfoot Cattle Co-operative Ltd., Gleichen
No. 1529	May 10/71	Boyer River Farming Co-operative Ltd., High Level
No. 1530	May 12/71	West Thorhild Natural Gas Co-op Ltd., Thorhild
No. 1531	May 13/71	Alberta Co-op Taxi Limited, Edmonton

No. 1532	May 18/71	Alberta Grain Processing Co-op Ltd., Bassano
No. 1533	May 18/71	NEW DAWN HOUSING CO-OPERATIVE LIMITED Lac La Biche
No. 1534	June 2/71	Belly Butte Cattle Co-op Ltd., Cardston
No. 1535	June 2/71	Dalum Gas Co-op Ltd., Drumheller
No. 1536	June 14/71	One Spot Cattle Co-op Limited, Stand Off
No. 1537	June 16/71	Teepee Cattle Co-op Ltd., Cardston
No. 1538	June 21/71	Nat-Co Construction Co-operative Limited, Calgary
No. 1539	June 21/71	Crowfoot Cattle Co-operative Limited, Gleichen
No. 1540	July 2/71	Conklin Co-operative Limited, Conklin
No. 1541	July 6/71	Davis Lake Co-op Limited, Rocky Lane
No. 1542	July 2/71	Sundance Ranching Co-op Limited, Gleichen
No. 1543	July 6/71	Plamondon Local Development Co-op Limited, Plamondon
No. 1544	July 6/71	Caribou Mountain Feeders Association Limited, High Level
No. 1545	July 7/71	Livingstone Gas Co-op Ltd., Pincher Creek
No. 1546	July 7/71	Peigan Co-operative Enterprises Limited, Brocket
No. 1547	July 23/71	Bellis Gas Co-op Ltd., Bellis
No. 1548	July 23/71	Peace River Seed Co-operative Limited, Rycroft
No. 1549	July 27/71	The Dipping Bath Cattle Co-op Ltd., Cardston
No. 1550	July 27/71	Native People Co-op (Calgary) Ltd., Calgary
No. 1551	July 27/71	North Settlement Metis Co-op Limited, Chard Trading Post
No. 1552	Aug. 9/71	Wembley Co-operative Seed Cleaning Association Ltd. Wembley
No. 1553	August 11/71	Moose Mountain Development Co-op Limited, Gurneyville
No. 1554	August 18/71	Alberta Organic Food & Farming Co-op Limited, Brooks
No. 1555	August 23/71	Gunn Co-op Association Limited, Gunn
No. 1556	August 26/71	Stavely Livestock Co-op Ltd., Stavely
No. 1557	September 9/71	OLDMAN RIVER FEEDER CO-OP LTD., Lethbridge
No. 1558	September 3/71	Fish Creek Cattle Co-op Limited, Hillspring
No. 1559	September 24/71	South Flagstaff Gas Co-op Ltd., Galahad
No. 1560	October 6/71	Duncan Farming Co-op Limited, Brownvale
No. 1561	October 4/71	Treaty Seven Cattle Co-op Limited, Cluny
No. 1562	October 5/71	Colinton Co-op Feeders Association Ltd., Colinton
No. 1563	October 15/71	May Lake Co-operative Limited, Grand Centre
No. 1564	October 15, 1971	Moose River Co-operative Limited, Bonnyville
No. 1565	October 15, 1971	Indian Crafts (Calgary) Co-op Ltd., Calgary
No. 1566	October 19/71	Nose Creek Co-op Ltd., Nose Creek
No. 1567	October 19/71	Fox Creek Buying Co-operative Ltd., Fox Creek
No. 1568	October 19/71	Wintering Hills Gas Co-op Ltd., Hussar
No. 1569	October 19/71	Boyle Street Community Services Co-operative Ltd. Edmonton
No. 1570	October 19/71	Hinton Co-op Limited, Hinton
No. 1571	October 27/71	CHIMO CO-OPERATIVE ASSOCIATION LTD., Edmonton
No. 1572	October 27/71	Longhorn Cattle Co-op Limited, Cardston
No. 1573	November 4/71	CANADIAN MOUNTAINEERING CO-OP LTD., Calgary
No. 1574	November 8/71	Foremost Co-operative Seed Cleaning Plant Ltd., Foremost
No. 1575	November 8/71	Triple W Gas Co-op Limited, Wrentham
No. 1576	November 8/71	McKenzie Co-operative Feeders Association Ltd., Manning
No. 1577	November 22/71	Economy Co-op Limited, Edmonton
No. 1578	November 22/71	Northern Valley Cattle Co-op Limited, Stand Off
No. 1579	December 1/71	Hooves and Horns Cattle Co-op Limited, Cardston
No. 1580	December 2/71	Chinchaga Co-operative Farms Limited, Keg River
No. 1581	December 8/71	Mocassin Co-operative Limited, Calling Lake
No. 1582	December 10/71	Bar Lazy S.C. Cattle Co-op Limited, Calgary
No. 1583	December 10/71	Box Coulee Cattle Co-op Limited, Stand Off
No. 1584	December 10/71	Riverside Cattle Co-op Limited, Brocket
No. 1585	December 10/71	River Acres Natural Gas Co-op Ltd., Fort Macleod
No. 1586	December 28/71	OKOTOKS RURAL FIRE ASSOCIATION CO-OP LTD. De Winton
No. 1587	December 28/71	Kin Co-operative Limited, Edmonton
No. 1588	December 28/71	Caslan Cattle Co-operative Limited, Caslan